ENVIRONMENTAL SUSTAINABILITY IN MINNESOTA BUSINESSES

AN ANALYSIS OF MAJOR EFFORTS, GAPS, DRIVERS, AND LIMITATIONS

MPP & MPA CAPSTONE PAPER

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1. Executive Summary

The principle objective of this research is to develop an improved understanding of Minnesota businesses' environmental sustainability actions. This report highlights major efforts and potential gaps in sustainability activities and collaboration between business and local governments by identifying primary motivations and limitations driving Minnesota businesses' environmental sustainability efforts. Research on business sustainability requires the collection and analysis of inconsistent data generated for various audiences. Due to these concerns over accessibility and the fragmented nature of environmental sustainability information, we utilized multiple data collection methods: content analysis of publicly available information, a survey of sustainability professionals in businesses, and semi-structured interviews.

Key areas in which Minnesota businesses are engaging in environmental sustainability activities are energy efficiency, water conservation, and waste reduction, followed by efforts related to reducing transportation impacts, environmentally-friendly material design and greenhouse gas reductions. Several of the largest Minnesota companies report efforts in all areas, while others do not report any at all. Higher reporting was associated with more established and larger businesses. Renewable energy, alternative transportation or reduced commuting and environmental product design were areas with little reported activity. Survey responses indicated more environmental activity than was included online in publicly available reports, particularly for local efforts, which are not relevant to the national audiences of large companies.

Survey responses and the literature review both suggest that the major drivers of investment in sustainability initiatives are some combination of cost-savings, reputational gain, and regulatory requirements. These motivations vary depending on a business's business model, industry, and management.

We found that businesses are engaging more with industry groups and other organizations than with local government. Local agencies may consider how they might further tap into local organizations or existing networks between sustainability professionals. Research should not rely on online information for a comprehensive understanding of the efforts of a business due to the lack of consistent reporting. Due to the amount of resources required for sustainability reporting, simplification of reporting methods may help increase reliable information, facilitate analysis, and reveal business characteristics that may facilitate increased collaboration and sustainability activities.

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2. Introduction

Amidst growing concerns over global climate change and environmental resource management, many businesses in Minnesota are reducing environmental impacts through sustainability initiatives. Just as the federal government begins state-based regulation of carbon pollution, many states are undertaking transitions to cleaner energy sources and are increasingly concerned about water and waste issues. Concurrently, many Minnesota businesses are implementing sustainability plans that aim to reduce greenhouse gas emissions, energy and water use, waste, and other impacts. Environmental sustainability can encompass direct actions to reduce environmental impacts, green management practices and decision-making, understanding life-cycle impacts from suppliers to end-use, collaboration with other organizations on environmental issues, and a myriad of additional aspects.

However, these efforts are highly variable by firm, and have not become standard practice in many industries. There is no unified reporting system or database for sustainability efforts which makes broad assessments of the current state of businesses' efforts difficult and complex. Those businesses that choose to self-report are often limited to larger businesses that have the resources to promote their actions. This lack of easily accessible public information creates a knowledge gap for policy makers, advocates, academics, and other businesses who wish to identify trends or opportunities in business sustainability.

This report is the result of research at the Humphrey School of Public Affairs to address this problem by developing an analysis tool of publicly available information and an environmental sustainability survey to examine the type and scope of sustainability actions done by large businesses in Minnesota. We also investigate the primary motivations and limitations facing managers when making decisions about sustainability projects. We highlight what current activities, some best practices, perceived gaps, and analyze potential areas of collaboration between these businesses and Minnesota cities.

Section three provides a review of current academic literature on environmental sustainability in business and motivations for corporate social responsibility decision-making. Section four explains our research methodology, including limitations. Section five presents the results of coding analysis of publicly available information. Section six presents the results of a survey taken by 47 sustainability professionals in Minnesota. Section seven includes business profiles based on interviews with sustainability professionals at three Minnesota businesses - 3M, Andersen Windows, and Best Buy. Section eight is a discussion of combined results from each method. Section nine puts forward our conclusions and recommendations for further research. Public information content coding categories, interview questions, survey questions and responses are included as appendices A – D respectively.

3. Background

Academic literature depicts environmental sustainability as a central component of corporate social responsibility (CSR). In early studies of CSR reporting in corporations, ecology or concern for the environment was included as a CSR issue in 95% of the firms that were engaging in any CSR activities (Carroll 2008). Within many industries, reducing environmental impacts requires action that is driven by motivations beyond maximizing profit, and much of sustainability literature is dedicated to understanding what motivations drive businesses to act in socially conscious ways (Aguinis & Glavas 2012).

Researchers refer to the links between CSR and corporate financial performance as the "business case" for CSR. The classic argument against business investing in social or environmental activities says that the sole role of business is to maximize profits for owners or shareholders (Friedman 1970). If profit maximization leads to negative social or environmental consequences, it is then the job of government to regulate and remediate. Others argue that business leaders are not better equipped than government or other sectors to handle environmental decision-making, and thus should not assume the responsibility (Moosa & Ramiah 2014).

Proponents of the business case for environmental sustainability, according to Carroll and Shabana, argue that CSR reflects a business' understanding of its own enlightened self-interest. By positively affecting communities and the environment, firms improve the long-term climate in which they do business. Dominic Barton wrote in the Harvard Business Review that businesses must serve the interests of all stakeholders including employees, suppliers, customers, creditors, communities, and the environment to achieve the goal of maximizing corporate value (2011). Others argue that businesses have an incentive to be socially responsible to prevent more costly government regulation or as a competitive advantage (Campbell 2007).

3.1. Corporate Motivations

A common claim is environmental behaviors by businesses are good for the bottom line or good for public relations, which help differentiate a business and ultimately increase sales. However, there is not always one clear explanation. When cost savings can be associated with an environmental initiative, the motivation for businesses may be profit maximization, with the environmental benefit being a spillover. Often corporate motivations for these behaviors are interrelated and should not be considered either in isolation or to be mutually exclusive (Aguinis and Glavas 2012). Table 1 lists a brief summary of research into key motivations for environmental behaviors.

Businesses may also engage in specific areas of environmental sustainability, but not in others. Porter and Kramer make the case for strategic CSR that aligns the types of activities with the corporation's value chain such that they "transform value chain activities to benefit society while reinforcing strategy" (2006).

Table 1: Literature Summary of Business Motivations for Environmental Sustainability Activities

Motivation	Research Summary
Cost Savings	The economic impact of cost savings on the bottom line is a primary motivator for many sustainability actions. Early proponents for proactive environmental actions by businesses pointed to savings associated with waste reduction (Hanna & Newman 1995). Eco-efficiency and lean manufacturing are two corporate philosophies that drive environmental efforts on a cost basis (Orsato 2008, Womack et al. 1990).
Environmental Market Opportunities	The alternative business case to efficiency improvements and cost savings is increasing profit through greater market share or the ability to charge higher prices for premium products, called eco-branding by Orsato (2008). The concept of a green economy offers businesses opportunities to grow sales based on new demand for cleaner products or customer interest in eco-friendly designs (Berry & Rondinelli 1998). Environmental products allow access to certain markets as government agencies take on green purchasing policies and firms require processes and systems that conserve water or energy or reduce waste (Ambec & Lanoie, 2008).
Competitive Advantage in Existing Products	Other rationales for socially conscious business choices, such as competitive advantage or reputational gains, have been extensively studied (Berchicci & King 2007, Reinhardt, Stavins, & Vietor 2008). Firms in commodity-type industries or with low innovation can use CSR to differentiate themselves (Hull & Rothenberg 2008). The business case may be in managing risk or forcing competitors to undertake similar actions at higher costs (Reinhardt 1999).
Regulation	Porter and van der Linde argue that innovation driven by regulation can lead to offsets that exceed the cost of compliance (1995). These offsets can come from efficiencies gained in process redesign, development of premium products that businesses can profit from, or competitive advantage for early adopters (Berry & Rondinelli 1998). However, it should not be assumed that compliance with regulation is the only option that businesses have. Dependent on resources and institutional pressures, businesses can choose to negotiate, avoid or manipulate as strategies to resist regulation (Oliver 1991).

Motivation	Research Summary
Corporate Culture and Employee Commitment	Businesses may pursue environmental sustainability as a defining characteristic of the corporate culture. Aguinis and Glavas found at the firm level, the primary reason for organizations to engage in CSR is related to expected financial outcome, but the firm's values in doing the right thing can have an influence (2012). In a summary of empirical evidence, businesses with CSR were rated to be more attractive to job seekers and have employees that report better work attitudes (Kitzmueller & Shimshack 2012). Besides the expense of attracting new employees and knowledge lost with turnover of staff, attractiveness to potential employees is a competitive advantage (Turban & Greening 1997, Kiron et al. 2012).
Management Values	Top corporate leadership has been correlated with CSR engagement. Businesses that have a high level of sustainability engagement are more likely to have Boards of Directors who are formally involved in sustainability and executive compensation incentives tied to sustainability metrics (Eccles et al., 2012). In a study of transformational leaders who are able to challenge employees to consider both environmental impacts along with meeting financial goals, Waldman et al. found that the presence of these leaders are not only linked to CSR engagement, but that they focus on strategic CSR that can also meet other corporate goals (2006).
Reputation	Businesses may invest in environmental activities to protect their reputation particularly those with a significant brand to protect, in a high exposure and visibility (Chiu & Sharfman 2009). Buehler and Shetty found that motivation varied by firm size with larger firms ranking enlightened self-interest over compliance and attributing it to firms having more resources and being more scrutinized by the public (1974).
External Stakeholders	A comprehensive analysis of CSR literature identified that stakeholders outside of businesses affect whether they engage in CSR and the type of CSR activities they choose to do (Aguinis & Glavas, 2012). Informal and formal networks between firms have also been found to influence other firms' adoption of environmental actions (Albornoz et al., 2014). In a study of 180 US-based firms, Eccles et al found that those businesses voluntarily taking on sustainability efforts are more likely to be formally engaging stakeholders and be focused more on the long term than those who have

Motivation	Research Summary
	low sustainability efforts (2012).

Several studies attributed firm size as a contributing factor to engagement in corporate sustainability efforts (Aguinis & Glavas 2012, Morhardt 2009, Waldman et al. 2006). However there may be an inherent bias in literature towards studying larger firms due to the availability of data (Morhardt 2009, Waldman et al. 2006). Medium-size businesses with revenues between $100 million to $1 billion are those Morhardt found to be not well studied.

3.2. Environmental Reporting

Stakeholders' may in part shape their views of a business by what the business shares publicly. Technology and interest by consumers and investors have driven more businesses to share environmental information (Kiron et al. 2012). In a global study of 4000 business leaders, Kiron et al. found that developing the measurement and reporting systems for transparency take years and significant resources to develop. Businesses may use symbolic efforts instead to meet requirements, which could give the perception of more sustainability (Tenbrunsel et al 2000). However, green marketing can backfire on a business if the organization does not have the practices integrated into the business, it can lead to a loss of credibility (Polonsky & Rosenberger 2001).

The adoption of voluntary standards, such as the International Organization of Standards (ISO) 14001 Environmental Management standard can also lead to additional reporting. Businesses who seek to be 14001-certified must report their environmental policy to the public, encouraging the increasing number sustainability reports published by businesses (Daub 2007). Daub found that sustainability reports alone are insufficient for comparison of CSR activities as it is biased towards certain businesses that may be considered to have best practices and finding that including sections of annual reports and other reports published by businesses gave a more extensive comparison of CSR activities (2007).

Environmental reporting varies by industry and business size. In a comprehensive study of all the available material online for 454 of the largest firms globally, Morhardt found significant differences by industry in the amount of information reported (2010). He grouped those with high reporting into those with environmental sensitivity or risk and those with close relationships with consumers. In a study of randomly-selected U.S. firms in five different industries, Holder-Webb et al. confirmed that most information disclosed in both CSR reports and websites is overwhelmingly positive, whereas required reporting is more likely to contain neutral or negative disclosures (2008).

3.3. Municipal Engagement in Sustainability

Cities are focusing attention on climate change, through energy initiatives, waste disposal, transportation and land use planning and water management (Betsill 2001, Bulkeley and Kern 2006, Corfee-Morlot et al. 2009). In a review of the development of urban climate governance, Bulkeley describes two waves of municipal efforts, the first starting in the 1990s and second expanding in the 2000s to include diverse networks and a greater variety of cities, spanning both across geography and sizes (2010). These municipal efforts include primarily climate change mitigation, but in some cases, adaption. Also noted in the second generation of municipal action on climate change is the involvement of private parties, including non-profit agencies and local and international businesses in the efforts (Bulkeley 2010).

Public-Private Partnership (PPP) is one model of local government engagement with the private industry, initially driven by the hope that involvement of the private industry in providing public services or developing public infrastructure would offer more cost-effective or innovative solutions (Saussier 2013). These partnerships typically can also include environmental outcomes that draw on the private industry's innovation and technology expertise (Grasman et al. 2014). Bulkeley presented the need for additional research on the shift of authority between public and private actors on the local level due to the potential for fragmentation of local government due to privatization of services affecting cities ability to coordinate climate change activity along with private businesses engaging with cities for climate change action (2010).

Cities, such as Seattle, which assisted businesses in measuring and reducing their greenhouse gas emissions through its Seattle Climate Partnership (Rice 2010), are more likely to directly engage with businesses to meet municipal goals. The City of Portland engaged businesses in its plan to reduce greenhouse gas emissions through energy efficiency using education, incentives, technical assistance, and annual awards (Rutland & Aylett 2008), but many cities do not have that capacity. In a study of 1497 U.S. cities of various sizes, Homsy and Warner found that capacity, particularly in smaller towns, has a significant effect on sustainability efforts (2015).

4. Methodology

The Great Plains Institute tasked us with developing a better understanding of environmental sustainability efforts among Minnesota businesses. We narrowed our focus to the largest Minnesota businesses, using market capitalization or sales. Large businesses tend to provide more sustainability information, and their environmental initiatives warrant attention because of the scale of their operations.

Research on business sustainability requires the collection and analysis of information with varying degrees of accessibility and reliability. Just as some firms are motivated to publish their environmental initiatives in glossy sustainability reports to improve public perception, others do not make sustainability information available because it is not a priority or they might risk losing competitive advantage. Due to these concerns over accessibility and the fragmented nature of

environmental sustainability information, we utilized multiple data collection methods. The three methods we used are content analysis of publicly available information, a survey of sustainability professionals in businesses, and semi-structured interviews.

We conducted a review of recent academic literature on environmental sustainability in business, corporate social responsibility motivation, environmental action in the marketplace, and private-public collaboration on environmental issues. This review helped to identify the need for multiple methods of data collection. Existing literature helped develop our coding and survey tools, and informed our analysis of the results.

4.1. Content Analysis of Public Information

We gathered sustainability reports and public information from Minnesota businesses based on market capitalization and size of operations. This allowed us to look at both public and private businesses. When we did not find a sustainability report, we searched annual reports and websites for environmental information. We initially selected the top 40 businesses in Minnesota by market capitalization for this analysis (Star Tribune, 2014). We also evaluated some privately held businesses headquartered in Minnesota because of size and sustainability leadership. In addition, we coded public information for any business who responded to the online survey described in the next section and were not on the initial coding list. We completed coding evaluations of publicly available information of 61 businesses. Table 2 lists these businesses by industry.

Table 2: Businesses Coded for Environmental Sustainability Data in Public Information

Industry	Number of Businesses	List of Businesses Coded
Manufacturing	22	3M, Andersen Corporation, Apogee, Bio-Techne, Deluxe Corporation, Donaldson, Ecolab, Fastenal, Graco, HB Fuller, Liberty Diversified, Loram, MTS Systems, NVE Corporation, Patterson, Pentair, Polaris, Proto Labs, Select Comfort, Tennant, Toro, & Valspar
Food or agriculture	10	Cargill, CHS, First District Association, General Mills, Hormel, Land O' Lakes, Mosaic, Schwan Food Business, Supervalu, Syngenta
Financial, insurance or real estate	7	Ameriprise, Northland Insurance, One Beacon, TCF, Unitedhealth, US Bank, Wells Fargo
Utilities, oil, energy or water	6	Chart Industries, Flint Hills Resources, Minnesota Power, Ottertail Power, Great River Energy, Xcel

Industry	Number of Businesses	List of Businesses Coded
Service industry	5	AmeriPride, Carlson, G&K Services, Lifetime Fitness, Buffalo Wild Wings
Health care or health services	5	CentraCare/Healtheast, HealthPartners, Mayo, Medtronic, St. Jude Medical
Retail	3	Best Buy, Luther Automotive, Target
Other	3	CH Robinson, SPS Commerce, Metropolitan Airport Commission
Total	61	

Using Montabon et al. as a model, we developed a coding rubric with 40 categories describing energy, waste, water, greenhouse gas emissions, transportation, and collaboration practices (Appendix A). Evaluators assigned each business a score in each category with the criteria in Table 3 below. To ensure consistency in scoring between evaluators, each individual scored the same report. The group discussed scores discrepancies.

Table 3: Coding Rubric of Environmental Sustainability Information.

Points	Criteria
0	No mention
1	Alludes to category without detailing action.
2	Describes action within the category with some details
3	Discusses action with comprehensive use, but no targets
4	Exceptional action in category and/or quantitative measures with targets

4.2. Survey of Sustainability Professionals

We created a survey for environmental professionals and managers inquiring about sustainability actions in energy, transportation, water, waste, and greenhouse gases, management practices, and collaboration with local government (see Appendix C). We designed the survey to allow respondents to be anonymous to encourage participation. We downloaded

the top 300 Minnesota businesses by sales from the Million Dollar Database by Dunn and Bradstreet to identify potential survey respondents. Duplicate businesses, subsidiaries, businesses that no longer had a corporate presence in Minnesota, and those for which we could not find either a specific email address for their sustainability professional, a general email address, or information request online form were eliminated.

We sent the remaining 230 businesses a link to the survey. Each of us asked their professional networks to forward the survey with sustainability professionals. In addition, Great Plains Institute shared the survey link via twitter. A total of 40 sustainability professionals completed the survey or about a 17 percent response rate from the compiled list of specific and general emails. Of the 40 respondents, 22 provided contact information. The remaining answered anonymously.

4.3. Semi-Structured Interviews

Finally, in order to develop more in depth understandings of the motivations, limitations, and future opportunities for environmental sustainability in business, we conducted interviews with sustainability professionals and a professor from the Carlson School of Management at the University of Minnesota. We selected three businesses that are sustainability leaders in their fields - 3M, Andersen Corporation, and Best Buy. Each semi-structured interview included questions to encourage deeper discussion of the benefits, challenges, opportunities, and potential collaboration involved in pursuing environmental sustainability activities (Appendix BAppendixC).

4.4. Limitations

There are a few key methodological limitations inherent in this study. First, there can be large discrepancies between the amount of information a business shares regarding their sustainability efforts and what they are actually doing. We attribute these discrepancies to a business's motivations, caution against losing competitive advantage, lack of resources, and consideration of the desires of stakeholder groups, such as investors and customers. It is likely that businesses select information to publish in sustainability reports, websites, and other publications based on business strategy. In an interview with strategic management professor Alfred Marcus, he warned about the lack of third party verification of public data, as businesses select which information they choose to report. In general, there is not independent verification of published information. In some cases, businesses highlight examples, but do not discuss business-wide sustainability. For the purposes of this research, coding of public sustainability information is limited to only what businesses choose to share and biased by the public image businesses choose to present.

A second methodological limitation involves the collection of survey data. Because we did not have a comprehensive list of sustainability professionals at targeted businesses, we relied on a combination of "cold call" emails and asking professionals to forward the survey to their contacts. This likely increased the response rate, but enlarged the survey population beyond the

initial list of businesses. Another concern was self-selection bias. Businesses more confident in their sustainability efforts may have been more likely to respond.

5. Coding Results

This section includes results for the total scores by business, which we then compared total scores by size, industry and year established. Of the 61 businesses coded, 79% publically reported at least one sustainability activity. To understand the major efforts and gaps in reporting, we grouped the results by activity type, including energy, water, waste, transportation, material design, and greenhouse gas reporting. We then report the coding results related to environmental management, risk assessment and collaboration efforts.

The coding results show that certain businesses report extensively on their environmental sustainability actions while other businesses report no activity at all (Figure 1). The top six businesses or "High Reporters" had scores 20% higher than the mid-reporting group. Beyond this group, the coding results descend evenly to the group of fourteen "Nonreporting," businesses which did not report any environmental sustainability activity.

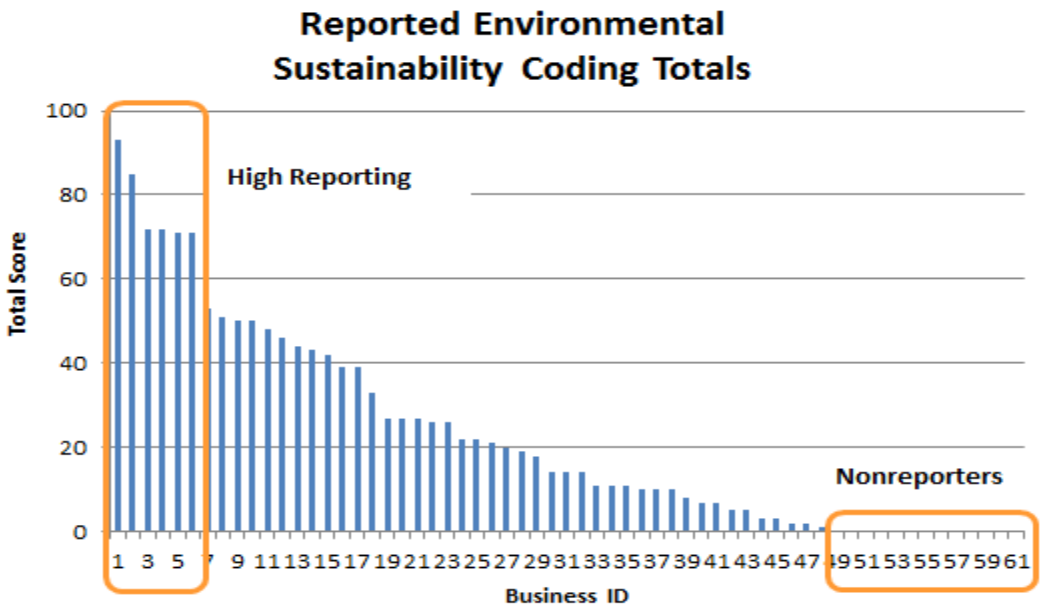

Figure 1: Total Coding Score by Individual Business

5.1. Coding Results by Business Size

We found weak positive correlation (0.32, $p < 0.002$) between reported sustainability efforts and business size. Our results are consistent with previous studies that show larger firms are correlated to higher reporting of sustainability efforts (Aguinis and Glavas 2012, Morhardt 2010, Waldman et al. 2006). When we looked at differences in sales, number of employees, and year established we found that not only did environmental sustainability reporting increase with the

median level of sales and number of employees the median year established decreased. When we compared the range of values of each characteristic, we saw huge variability within the mid-level of reporting. What is striking is that all of the high reporting businesses are over 50 years old (Table 4).

Table 4: Comparison of Businesses Characteristics by Level of Reporting

Type	Public / Private	Year Established	Annual Sales (million $)	Employees
Nonreporting	77% / 23%	1831 to 1999 Median 1982	$26 to $1,423 Median $944	54 to 31,700 Median 1,200
Mid-reporting	46% / 54%	1806 to 2004 Median 1939	$2 to 130,474 Median $2,173	575 to 366,000 Median 8,000
High Reporting	50% / 50%	1875 to 1949 Median 1912	$911 to $134,900 Median $17,457	9000 to 143,000 Median 46,124
All Businesses	67% / 33%	1806 to 2004 Median 1943	$2 to $134,900 Median $1,549	54 to 366,000 Median 7,023

5.2. Coding Results by Industry

Businesses that did not report any environmental activity were in six different industries (Figure 2). Utilities and retail businesses all reported some environmental activities. This may be due to the regulated nature of utilities and visibility of retail businesses (Aguinis & Glavas 2012).

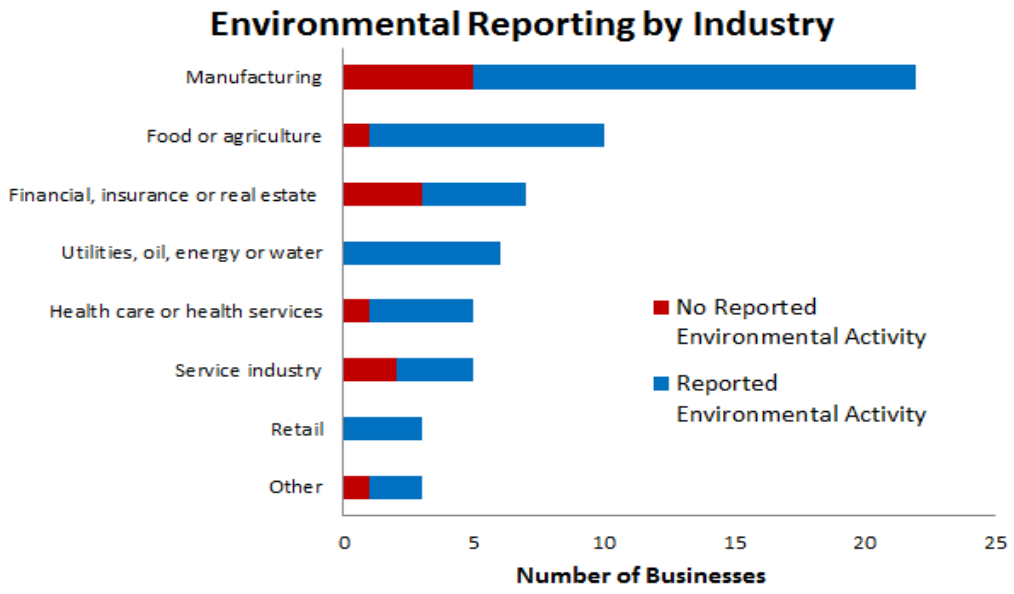

Figure 2: Environmental reporting comparison by industry

5.3. Coding Results by Activity Type

We compared the types of activities that businesses engaged in by separating the companies in quartile groups based on their total coding score (Figure 3). The highest reporting group was actively engaging in all types of environmental activities that we looked for. The next two groups, the 2nd and 3rd highest quartiles had almost all companies reporting waste and energy reduction activities, but less in the four other areas of water, transportation, material design and greenhouse gas reporting. The fourteen companies that had no environmental reporting dominated the lowest reporting quartile, but had two companies that reported waste reduction efforts only.

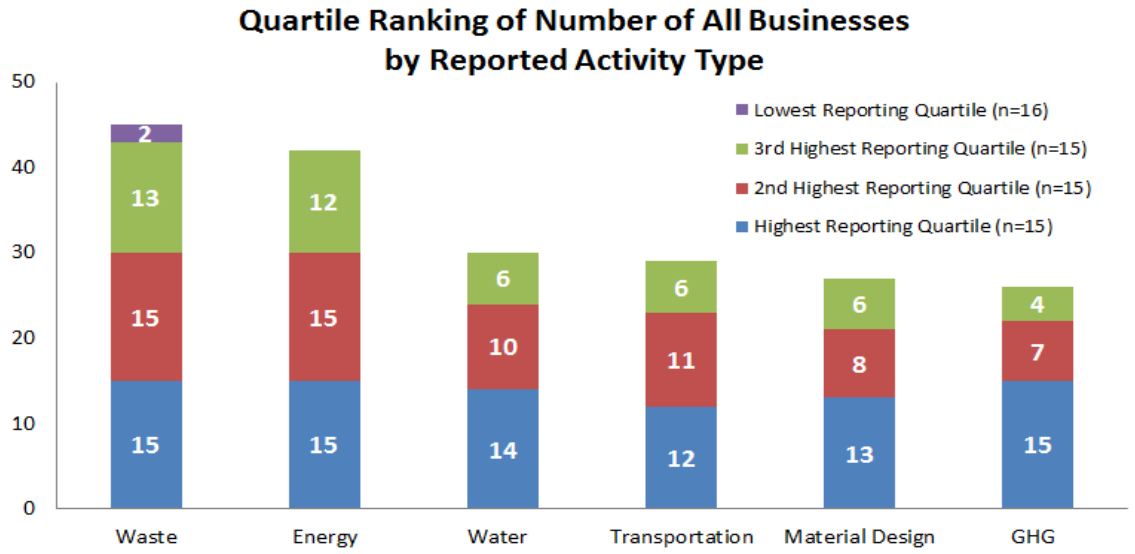

Figure 3: Quartile Ranking of Number of all Businesses by Reported Activity Type

5.3.1. Reported Energy Reduction Efforts

Energy was a popular topic for sustainability reporting. Of the 61 businesses, 41 reported efforts in energy conservation. The leaders in energy reporting were not limited by business size, industry or ownership type. The seven businesses that reported the most activity were a mix of privately-held and public businesses, spanned five different industries and had employee counts around 10,000, 50,000 and well over 100,000.

Besides general energy conservation efforts, the most common energy initiative was efficient lighting. Also popular were energy conservation in existing buildings, in new buildings, and in manufacturing processes with more than one quarter of businesses mentioning these practices. These types of initiatives are all cost savings efforts as well as environmental ones. Their relatively widespread adoption suggests that businesses are focusing on sustainability initiatives with a clear business case, supporting the literature that sustainability efforts can be a co-benefit to profit-maximization and businesses will continue to work on CSR activities that contribute to the organization's financial success (Carroll 2008).

The next most popular energy-related initiative was employee involvement with 25% of businesses mentioning employee engagement in energy reduction programs. These efforts can enhance employee's commitment to their employer while engaging more resources in energy efficiency (Kiron et al. 2012). Ten to fourteen businesses reported efforts in heat recovery or investment in renewable energy (solar, wind, or other). The initiatives which were rarely mentioned included energy resiliency or independence or benchmarking outside of the business.

5.3.2. Reported Transportation Energy Reduction Efforts

Efforts to reduce energy used in transportation-related activities were mentioned by 48 percent of businesses. The greatest transportation related effort reported by 36% of businesses was improving fuel and vehicle efficiency. Food and agriculture and retail industries where transportation is a significant business activity reported the greatest efforts to reduce transportation energy costs. Efforts such as managing energy use related to business travel and encouraging employees to reduce energy related to commutes were reported by about ten percent of the businesses coded. Only eight percent of the businesses reported promotion of walking, biking, or transit use in contrast with a higher positive response rate to the survey. Results were greater when questioned in the survey about efforts to reduce employee commutes. Efforts to encourage activities such as biking and carpooling are seen as support of employee wellness even though they count toward LEED certification. Businesses tend to report transportation activities related to operations rather than peripheral activities such as employee commutes.

5.3.3. Reported Greenhouse Gas (GHG) Reduction Efforts

Business reports about GHG emissions reflect the recent increase in reporting in the media. GHG was mentioned by 26 businesses, more often than any other effort except energy conservation, water and waste reduction. GHG emission reduction efforts received the third highest individual score compared to all 39 other efforts coded. Businesses who report efforts to reduce GHG emissions report greater efforts at this type of sustainability effort than other effort. Eleven businesses not only measure GHG emissions, but also have set specific GHG reduction goals. These eleven businesses represent six of the eight industry categories and all industry categories had a business report something about GHG. Both the frequency of reporting and total score shows recognition of the importance of this sustainability issue.

5.3.4. Reported Water Conservation and Use Reduction Efforts

Fifty percent of all coded businesses from all industries reported efforts to conserve water. Only energy conservation and waste reduction efforts were mentioned more often. Efforts in water conservation and use reduction had the fourth highest score of any measure. This high score was based on the high number of specific project examples. However, relatively few businesses reported measuring the reductions or setting specific water reduction goals. Similarly to other

types of sustainability efforts, the service and "other" industry types did no more than state the importance of water with no effort to report specific projects, measurements or goals.

5.3.5. Reported Waste Reduction Efforts

Following Montabon et al's methodology, a number of topics were coded for waste, including recycling, reactive waste reduction, proactive waste prevention, substituting a material that is less hazardous and composting organic waste. Recycling was the most common waste reduction initiative mentioned, with 35 businesses including recycling in their reporting, with seven of those businesses disclosing specific targets for materials to be recycled.

On average, retail, food or agriculture, health care or health services and manufacturing had higher scores than the other four industries for reported waste reduction activities. The nature of these industries being more waste-intensive could contribute to more activity in this area. Waste reduction through reactive techniques or proactive prevention were equally common in reporting with 23 businesses discussing each of these but only ten businesses talking about both proactive and reactive waste reduction. Less common was the reporting of replacing materials with ones that are more environmentally-friendly, which was noted by a quarter of the businesses. Composting was reported as a practice by 15%, which could be an indication that it is not commonly done or not perceived to be relevant for online reporting.

5.3.6. Reported Sustainable Material Design Efforts

To assess how the environment was considered in product design, content analysis included five different measures: the use of life cycle analysis (LCA), eco-products, design or processes, packaging design that was reduced or returnable, reduction in toxic or hazardous materials in product design or use of bio-based replacements. Activity in this grouping was less commonly reported than in energy, water, transportation or waste (Figure Eco-products and packaging were the most commonly reported, with 15 businesses each. The businesses that reported extensively on eco-products and processes, such as 3M, Ecolab, Andersen, Tennant and Pentair, have business models that target environmental markets, where marketing their products and processes as efficient and environmentally-friendly serves to differentiate their products. The businesses which reported the highest level of packaging reduction are consumer-facing businesses, including 3M, Land O Lakes, General Mills and Hormel, which indicates that reputation and marketing may be incentives for the reporting of these efforts.

Use of the LCA methodology was reported by ten businesses, as was replacement of toxics or hazardous materials. Low reporting could be expected in these areas, as LCA methodology can require extensive resources and businesses could take on some amount of reputational risk in discussing toxic or hazardous wastes, even in a positive light. Reporting of bio-based replacements was an even smaller set of six businesses, most likely due to the specific nature of the businesses' products.

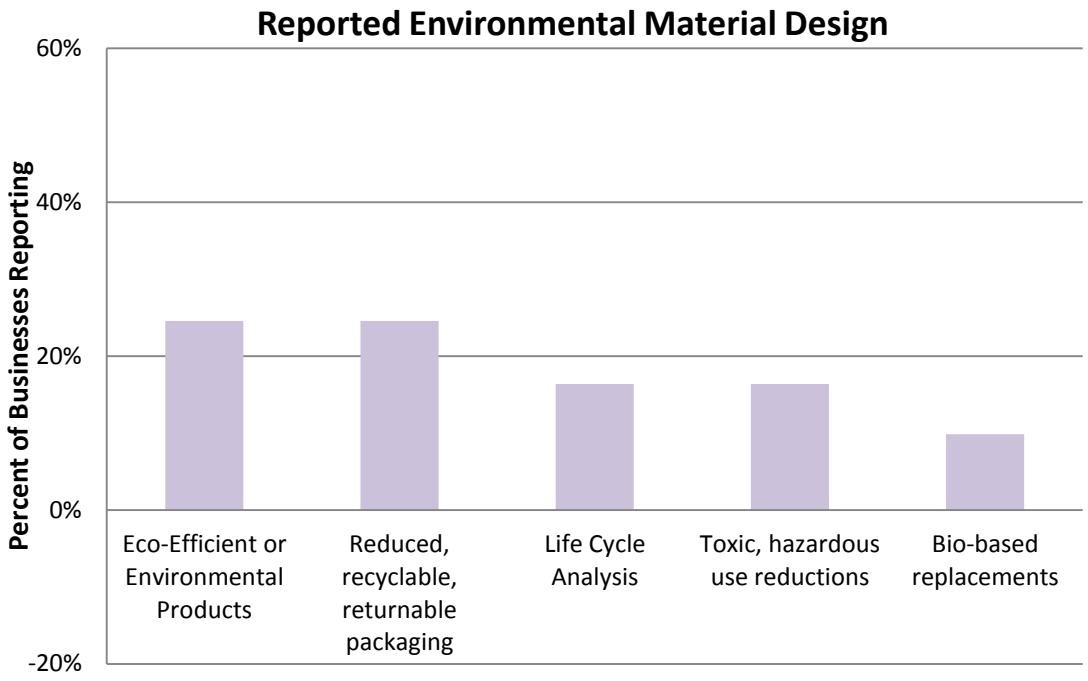

Figure 4: Reporting of Environmental Material Design Activity

5.3.7. Reported Environmental Management Policy and Perception of Risk

Businesses reported environmental management policies quite often. A total of 55 percent of the 61 coded businesses reported activities in the environmental policies category. Consideration of supply chain environmental practices also received attention by 41 percent of the businesses coded. Evaluation of business risk related to sustainability practices is still in its infancy as demonstrated by the fact that only 19 businesses mentioned the concept in their publically available information. Six businesses emphasized sustainability efforts in their materiality statements. These six businesses had average sales of over $117 billion and over 57,000 average number of employees.

5.3.8. Reported Collaboration

The coding analysis included three different types of collaborative efforts: consultation of stakeholders on environmental issues, partnerships with other organizations and collaboration with local government. The utilities, oil, energy, or water, industry received the highest average score in reported level of collaboration. This is most likely due to the high level of regulation in the industry. Businesses that are using the Global Reporting Initiative (GRI) sustainability reporting are more likely to mention stakeholders, as the GRI reporting process requires disclosing information to stakeholders. About one third of the businesses reported environmental reporting to

> "Develop partnerships and participate in a positive dialogue with governmental agencies and other organizations engaged in tackling climate change"
>
> 3M 2014 Sustainability Report

stakeholders and working with other businesses or organizations on sustainability efforts.

Collaboration with local government is not a common topic in sustainability reporting. Of the 61 businesses, there were only three descriptions of collaboration with local government, with four additional businesses mentioning collaboration with government but not describing specific details. Xcel referenced working with the Cities of St. Paul and Minneapolis and Hennepin and Ramsey Counties on the Energy Innovation Corridor. 3M developed a Smart Cities Initiative in Europe and lists "Develop partnerships and participate in a positive dialogue with governmental agencies and other organizations engaged in tackling climate change" as one of its commitments to address climate change in its 2014 Sustainability Report. Other partnerships include the following:

- Liberty Diversified reported public and private investment in their biomass project in Becker, MN.
- Target reported working with local watershed districts in water conservation.
- Ameriprise reported working with the city of Minneapolis on their Bike and Walk to Work event.

6. Survey Analysis

The survey was taken by 47 professionals anonymously with an option to volunteer information to identify themselves and their business. All questions were optional, and not all respondents answered every question. Most of the questions were answered by 40 respondents. The goals of the survey were to strengthen our understanding of what sustainability actions are being done by large Minnesota businesses, better understand the primary motivations and limitations of these actions, and identify current and potential areas of collaboration with local government. For the complete survey results see Appendix D.

6.1. Sustainability Actions

Asked if their business published a sustainability report, respondents were evenly split without any notable differentiation by industry. All seven businesses with more than 50,000 employees responded yes.

Businesses were asked to indicate whether they had sustainability targets in a number of areas (Figure 5). More than half of respondents had targets to reduce energy use and waste. About half of respondents had water use and greenhouse gas reduction targets, and eight businesses had renewable energy targets. Other targets mentioned were erosion reduction, ecological conservation, and VOC emission reduction.

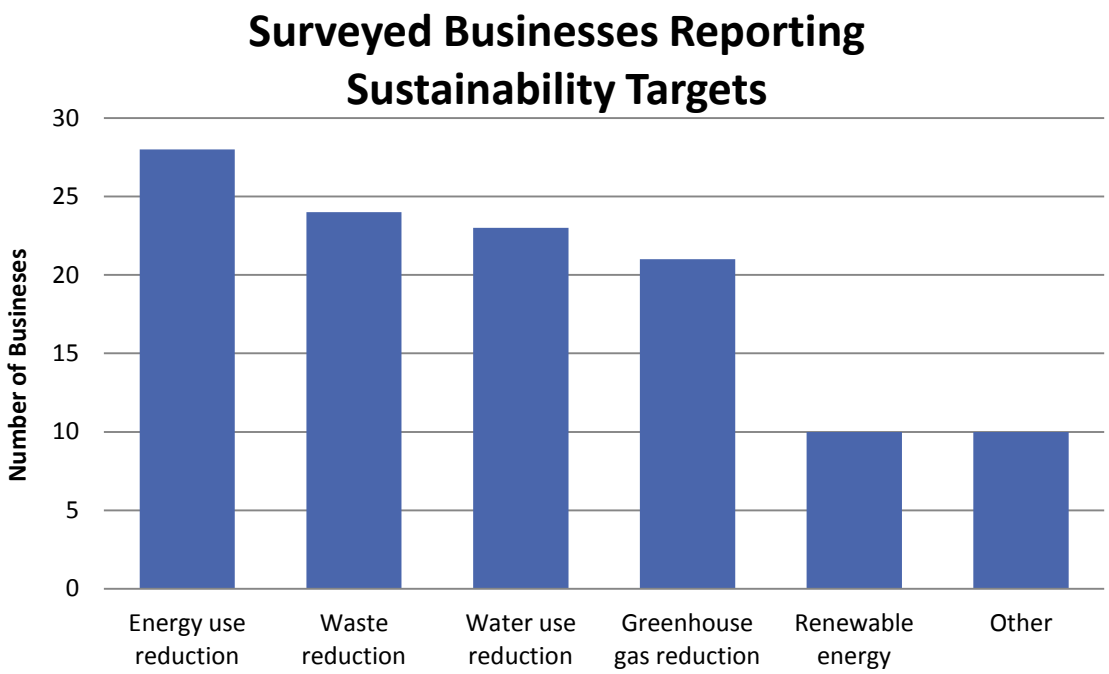

Figure 5: Surveyed Businesses Reporting Sustainability Targets

On energy use, more than three quarters of respondents said they tracked energy use in facilities and use efficient lighting. About 40% have made other building efficiency improvements, and participate in ENERGY STAR or other green building certification programs. Only seven businesses claimed to have an employee engagement program aimed at reducing energy usage. Five businesses have on-site solar, and five businesses either purchase renewable energy credits or participate in a green pricing program with their utility. Of businesses involved in renewable energy generation or purchase, there was no dominant industry or firm size. Other energy use initiatives provided by respondents included automated thermostats in retail locations, compressed air systems for leak detection, and an employee solar discount program.

On reducing energy use related to transportation, 37% of businesses have worked on improving vehicle efficiency and maintenance, and 30% of businesses have looked to business travel management. Ten businesses used alternative fuels in fleet vehicles, and ten businesses have electric vehicle charging stations. Only eight businesses claimed to have reduced fleet mileage. Other responses included optimizing routes, loads, and offering convenience parking for fuel-efficient vehicles. The most notable variation in the data shows that more than half of manufacturing firms (6 of 11) have no efforts to reduce energy use related to transportation. Understanding that businesses have different transportation needs, response rates were seemingly low, and only one business claimed to have no fleet.

On water use, 22 of 39 businesses practice some form of water conservation, and 20 businesses have made storm water management improvements. About 32% of firms (13) have water quality assurance programs, all of which have less than 10,000 employees. Other responses

were pre-treatment programs and smart technology, and one firm indicated that their efforts need improvement. Manufacturing and food or agriculture firms claimed the most action, while firm size did not indicate any trends.

On waste, all respondents recycle, 30 businesses have waste reduction efforts, and 28 businesses practice some form of reuse. Only 14 businesses compost, six businesses use bio-based replacements for hazardous materials and two businesses have anaerobic digestion. These efforts take place across all industries and firm sizes.

On GHG reporting, 21 businesses measure their scope 1 direct GHG emissions, and 18 businesses report their emissions, most commonly to the Environmental Protection Agency, the Carbon Disclosure Project, the Minnesota Pollution Control Agency, or in sustainability reports. Fewer businesses measured scope 2 and 3 emissions, and 12 businesses said they do not measure or report GHG emissions at all.

On employee commutes, more than 20 businesses responded positively to having bike racks and/or showers on-site. Eleven businesses have incentives for employees to carpool such as a carpool parking spots and a rideshare program. Nine businesses offer transit passes or discounts, and six businesses have incentives to walk or bike to work including a point system with cash prizes, indoor bike parking, and bike to work day.

6.2. Gaps

Survey results suggest that there are three primary gaps in respondents' sustainability actions. First, while most firms track energy usage at facilities, less than half have made efficiency improvements apart from utilizing efficient lighting. Because buildings account for such a large portion of business' energy usage, there appears to be room for progress.

Second, businesses' efforts to reduce energy use related to transportation were fewer than those in facilities, water, and waste. While one business indicated that they did not have a fleet, not knowing transportation needs and fleet sizes is a limitation of this survey data. Despite this, most businesses did not have vehicle efficiency programs, business travel management practices, or fleet mileage reduction.

Third, only five businesses have on-site solar and five businesses reported buying renewable energy credits or participating in green-pricing programs. While it is encouraging from a sustainability standpoint that some businesses are interested in pursuing renewable energy investments, these data suggest that many large Minnesota businesses have yet to follow suit.

6.3. Significant Drivers

When asked to rank the motivations for sustainability actions given a set of defined options and an "other" field to input additional reasons, the top three responses were cost savings, regulatory compliance, and reputation as shown in Figure 6.

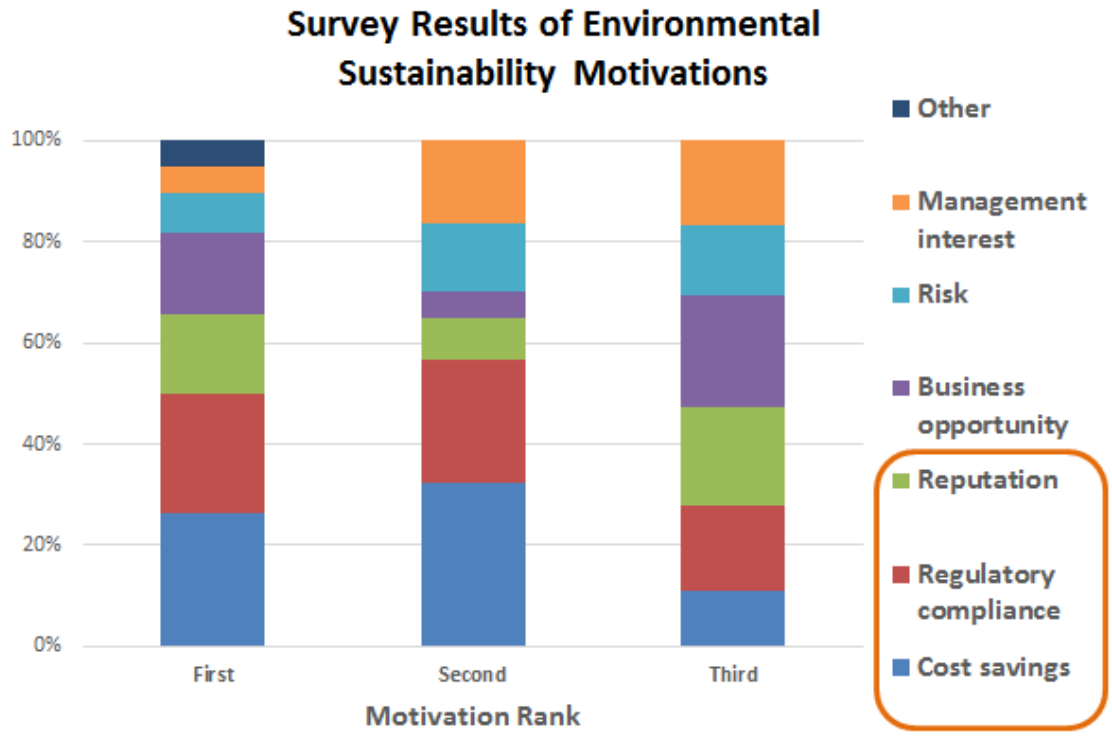

Figure 6: Top Three Motivations for Environmental Sustainability Activities (sorted by first choice)

Cost savings is a prerogative for all businesses, and lends credence to Carroll and Shabana's business case for corporate social responsibility. If cost savings is the primary motivation for actions such as energy efficiency or waste reduction, then the secondary benefits such as a reduction of environmental impacts are spillover effects.

The averages of all respondent's rankings are the basis for top respondent's rankings. Therefore regulatory compliance and reputation likely drive sustainability actions to varying degrees for each specific business and its industry. Some firms such as retailers or businesses that provide services directly to the public have important, visible reputations, and are susceptible to changes in public perception. Thus, sustainability gives these firms opportunities to bolster reputations, and build loyalty and competitive advantage among their customers. Other firms such as manufacturers or service providers who are somewhat removed from the public because of their position in the supply chain may be more likely to value regulatory compliance over reputation. If their customers are other businesses primarily motivated by cost savings, reputation may not be dependent on a firm's environmental impacts. Furthermore, these firms may be in more heavily regulated industries with higher levels of pollution and resource use. Depending on a firm's industry, it is likely that cost savings and either reputation or regulatory compliance are the major drivers of sustainability actions.

6.4. Limitations

The survey asked respondents to identify the main limitations or deterrents facing their business when making sustainability decisions. Based on an aggregation of all responses, the primary

limitations were cost, ROI, limited resources, culture, and difficulty of implementation. Interestingly, just as the primary motivation for sustainability action was cost savings, respondents claimed that the most important limitation was cost. ROI is closely intertwined in this consideration, as it considers the value of cost savings and other benefits over time relative to those from other projects. Considered together, cost savings as a motivation and cost and ROI as limitations suggest that the business case for CSR dominates the decision-making process of managers in these firms.

Limited resources should be differentiated from cost in two main ways. Firms may find that a sustainability actions has favorable returns in an amount of time that meets their preferred return on investment (ROI), but do not have the resources, whether human, capital, or institutional, to successfully carry out the action. In addition, having limited resources affects how a firm determines risk, and may dissuade managers from making risky, yet beneficial sustainability actions. In this way, limited resources and difficulty of implementation are closely related because firms may lack the personnel, knowledge, or capital to implement a sustainability action despite having made a strong business case. One respondent also noted a limitation was "knowing how much to share...too much information may lose a competitive advantage, but want to share successes too."

6.5. Potential Areas of Collaboration

When asked to describe any notable collaboration efforts with local governments, 16 businesses responded. The businesses that responded in this area included all of the health care or health services and more than half of the manufacturing businesses who responded. Six businesses collaborated on water, four on waste, three on solar, and three on energy efficiency. Two others did not provide a specific topic, one stating they knew that collaboration with local agencies had taken place and another that they "engage government heavily" in their operations, but in other states. Commuting reduction efforts and volatile organic compound (VOC) emission reduction were each mentioned once. Collaboration with local government on waste reduction efforts and water management were the topics described in more detail. For three of the businesses that gave collaboration examples on water management, water is significant to their operational processes.

"knowing how much to share...too much information may lose a competitive advantage, but want to share successes too."

Anonymous Survey Response

7. Business Profiles

We selected businesses for in-depth interviews based their commitment to sustainability, visibility as Minnesota companies and professional connections that we had. Interviews within companies of interest provide a more nuanced understanding of how sustainability decisions are made and how it might be embedded within a business. The following section includes

profiles of three Minnesota businesses that have shown leadership in environmental sustainability.

7.1. 3M

3M has a long history of making the business case for environmental efforts, dating back to the 1970's with a program called 3P, Pollution Prevention Pays. 3M's investment in sustainability is now driven by the potential for growth. Keith Miller, Sustainability Strategic Advisor, sees sustainability being built into the product development process at 3M as a way for the business to develop sustainable products that meet customers' needs and to differentiate 3M products from competitors. Using a materiality assessment conducted with stakeholders, Miller believes the business will use its growth model to be more sustainable and sustainability will drive growth, saying, 'By focusing on the right things, we can have an impact on that is most beneficial to both the world and to 3M, helping our growth."

'By focusing on the right things, we can have an impact on that is most beneficial to both the world and to 3M, helping our growth."

Keith Miller, 3M Sustainability Strategic Advisor

In its description of About 3M on its website, two examples are given of products that have environmental and financial impact: reducing power line weight and cutting waste in manufacturer's processes. 3M then describes what Porter and Kramer called the triple bottom-line: environmental, social and financial success. "We reduce the weight of power lines so they can carry more power to more people. We help manufacturers use less while accomplishing more. We automate healthcare data so the right people get the right information. Across the globe, 3M is inspiring innovation and igniting progress, all while contributing to true global sustainable development through environmental protection, corporate and social responsibility and economic progress."

Alignment of sustainability to 3M's growth model is an example of strategic CSR, as Porter and Kramer described to "transform value chain activities to benefit society while reinforcing strategy. (2006)". Solar film and energy saving technologies position 3M well as renewable energy and energy conservation continue to grow in popularity. As a diversified industrial business that also provides name brand products, 3M has a significant brand to protect. In 2013, 3M began a process of identifying which initiatives have an impact on 3M reputation, are important to stakeholders and perceived ability of 3M to make a positive difference. Water quality, reducing waste and energy use were in the top category along with ethical business and working conditions. Air quality and availability of sustainable products and services were in the mid-level grouping (3M 2014 Sustainability Report).

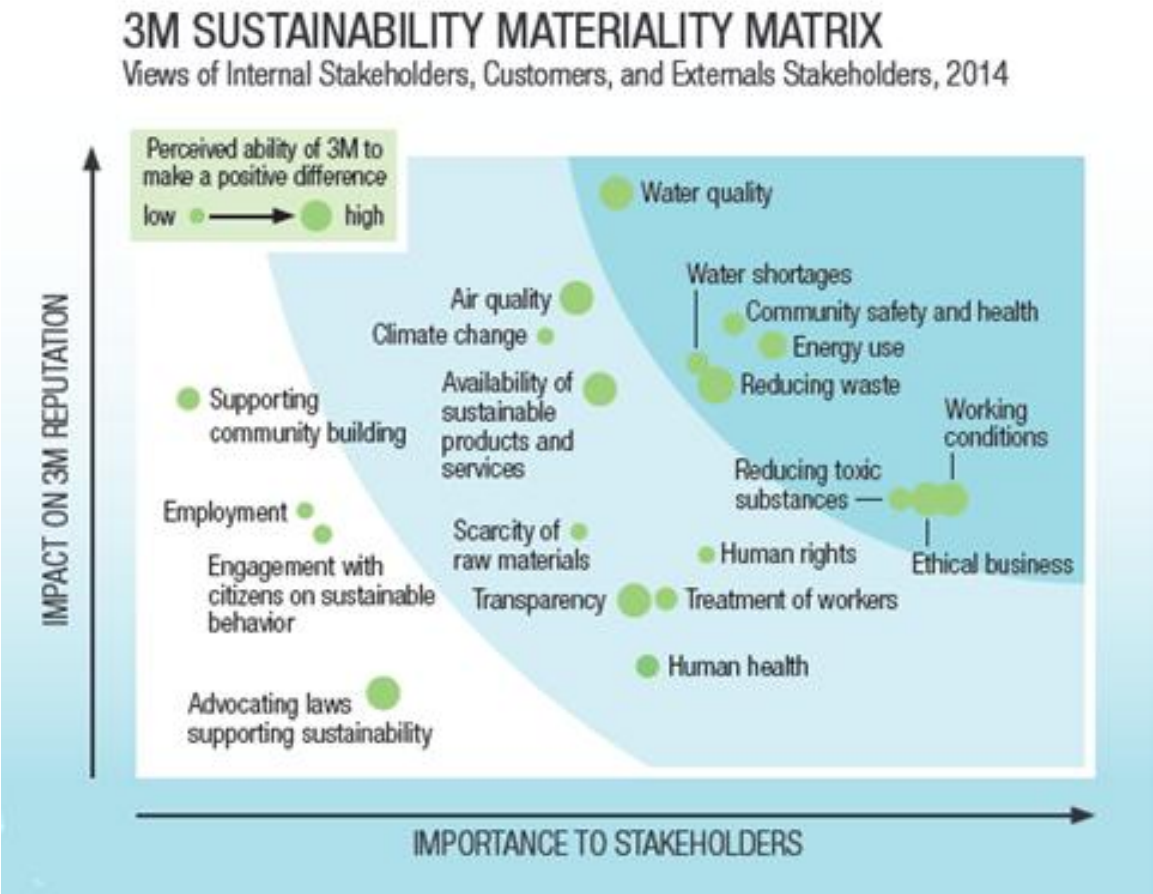

Figure 7: Materiality Matrix

Another contributing factor is the top down support from the CEO Inge Thulin (Miller 2015). 3M has sustainability responsibilities shared between two different vice president level staff, one in operations and the other with responsibilities for marketing and research and development. Although it is unclear if compensation is linked to sustainability targets, the executive-level involvement in sustainability (3M 2014 Sustainability Report) reflects Eccles et al.'s research that top-down support is linked to high engagement in sustainability efforts. 3M has also made efforts to embed sustainability in each of its business groups by appointing high-level managers to a business-wide committee and including sustainability in its leadership attributes, for which each employee is rated in their annual performance review (Miller 2015).

Another perceived benefit to 3M is the attraction of sustainable businesses to the next generation of talent. Sustainability is part of 3M's brand and culture, which will help attract the talent 3M will need. With as many as 40,000 of the current 90,000 employees are projected to retire in the next 5 years or so, Keith Miller finds the sustainability culture of 3M as a way to attract the best talent who are interested in ethics and sustainability (Miller 2015). A future direction of sustainability within 3M is to use an internal social networking application to drive additional employee engagement.

Although a global business, 3M has participated in a number of local government collaborations. In 2013, 3M held a Sustainable Solutions for Smart Cities in Brussels, following the European Commission's Smart Cities Initiative. By bringing together "customers and industry thought leaders," 3M enhances its reputation as a sustainability leader while promoting its products that align with the sustainability efforts in e-mobility, transportation, and smart grid technology (3M 2014 Sustainability Report). Examples of collaboration within Minnesota are the promotion of solar investment with Xcel and working with the Cities of Woodbury and Oakdale on landfill and drinking water issues. A potential opportunity to engage 3M within Minnesota is to replicate the Sustainable Solutions for Smart Cities to promote discussions across businesses and cities on smart cities applications.

3M continues to positioning itself as an international leader in sustainability, dating back from the inception of the World Business Council for Sustainable Development and then CEO Livio DeSimone co-authoring a book on Eco-efficiency. Due to 3M's position as global business, the opportunities for local government to engage 3M may be limited. A strategic focus on local collaboration efforts that align well with 3M sustainability goals or on-going efforts may be more successful. The materiality study results had engagement with citizens on sustainable behavior and advocating laws supporting sustainability low on impact to 3M's reputation and importance to stakeholders, so these are unlikely areas of future focus.

A key lesson that other businesses can take away from 3M's sustainability efforts is the relevance of innovation driving growth and sustainability results. With technology platforms that supply the science and application solutions to various businesses, 3M supports discussions across business units by a Tech Forum, including one that focuses on environmental efforts, the Green Chemistry Tech Forum, and includes research from the University of Minnesota.

7.2. Andersen Windows

Andersen Windows, the largest window and door manufacturer in North America, takes pride in the emphasis it places on sustainable operations, sustainable products, and its commitment to employees and community. The Bayport, Minnesota business scored highly when public sustainability information was analyzed, and its efforts to increase energy efficiency, reduce transportation emissions, and use of life cycle analysis stood out. The business's reports were comprehensive, and demonstrated Andersen's ability to engage employees with sustainability training and "Green Teams" that lead to projects around the business with real, positive impacts such as pollution reduction and increased energy efficiency.

In an interview with Eliza Clark, Andersen Window's Corporate Sustainability Manager, it was clear that Andersen prizes its ability as a private business to prioritize long-term sustainability investments that bring a number of benefits (2015). Because sustainability is central to Andersen's brand, value is added to marketing and sales efforts, and new employees who care about the environment and social responsibility are attracted to the business. Andersen has also found cost savings and emissions reduction in energy efficiency and lean manufacturing efforts. Finally, sustainability is a lens used to spur product innovation.

Because sustainability is "programmatic" and meaningfully embedded into employee's mindsets, according to Clark, the largest challenge facing leadership is selecting which opportunities to pursue in order to make the most difference. The business's sustainability report claims "sustainability is not an initiative at Andersen, it is ingrained within our core value and expressed through the strides of leadership." As evidence of this, the business invested in life cycle analysis software. The software will enable them to evaluate all products enabling efficient use of product development funds.

Andersen belongs to a number of groups focused on sustainability including the Certified Forest Products Council and the EPA Smartway Shipper program. It has been recognized as an ENERGY STAR Partner of the Year four times and as Xcel Energy's Partner of the Year in addition to multiple industry awards for green practices. Andersen partners with trade groups and nonprofits, and has built more than 900 homes for Habitat for Humanity. Andersen Windows is clearly a model for other businesses, and demonstrates how adopting sustainability as a central component to its business model is good for business, employees, and communities.

7.3. Best Buy

Information about sustainability efforts by Best Buy were obtained from the 2014 sustainability report, answers to the online survey, and a personal interview with Suzanne Hilker, Manager, Corporate Responsibility and Sustainability. Focus varied greatly between the information obtained from the sustainability report and interview. The sustainability report first focused on collaboration as evidenced by stakeholder engagement, materiality assessments, and partnerships before highlighting specific actions. Best Buy's focuses sustainability efforts in four areas, responsible recycling, sustainable products, responsibility sourcing, and carbon reductions.

Best Buy's establishment of a responsible recycling program in 2008 has had great reputational value. Having achieved the goal of recycling one billion pounds of electronic and appliance waste, the goal has been updated to an additional two billion pounds by 2020. All recycling partners are required to comply with the highest industry standards and be ISO 140001 or equivalent) certified (Best Buy 2014 Corporate Responsibility and Sustainability Report). Best Buy's recycling efforts alleviate what would otherwise have been a burden of local government (Hilker, 2015). All stakeholders benefit by saving tax dollars without formal collaboration or regulatory efforts.

Sustainable products such as Energy Star identification and providing the EPEAT® tool that allows customers to select products produced with the lowest lifetime environmental impact and responsible sourcing and go hand in hand for a retail business and private label manufacturer (Best Buy 2014 Corporate Responsibility and Sustainability Report). Best Buy is a founding member of the Electronic Industry Citizenship Coalition (Hilker, 2015). This coalition and partnerships with national brands provides a supplier code of conduct and audit methodology. In addition, Best Buy follows a six step Supply Chain Sustainability program (SCS) including auditing high risk exclusive brand suppliers, addressing violations of standards, and

remedial compliance training. (Best Buy 2014 Corporate Responsibility and Sustainability Report). Suzanne explained how important recognition such as their receipt of the 2014 Outstanding Training Initiative Award is to show third party verification of Best Buy's leadership.

Best Buy's leadership has set a goal of reducing carbon by 20 percent by 2020. Best Buy expects to meet this goal through efforts to reduce energy use such as their recent retrofitting of lighting in 800 stores. The resulting efficiency gains have reduced energy use. In addition, all 14,000 stores have energy management systems that have reduced the use of heating, air conditioning and lighting equipment. Reductions in energy use saves money and makes their Carbon Disclosure Project (CDP) score great (Hilker, 2015).

Suzanne stressed the importance of employee engagement as a motivation and benefit of sustainability efforts at Best Buy. Best Buy has an employee Net Impact chapter with 200 members. This team designs employee sustainability projects and events. Implemented projects include free bus passes, vanpools and preferred parking for carpools, and a locker room available for employees who bike to work. She feels communicating Best Buy's commitment to sustainability through the corporate intranet, sustainability blog, store newsletters, and a new interactive digital display at their headquarters helps build positive employee morale, helps hire and retain talented millennials, and helps store associates communicate the value to customers. Since the economy has recovered, plans to increase sustainability activities and communication regarding these activities to employees and consumers have increased. Suzanne said that even during the economic downturn they still worked on sustainability, they just didn't spend the time or money publicizing it.

Reputation, leadership, employee engagement are significant motivations for Best Buy's sustainability efforts. In addition, ensuring supply chain integrity and receiving third party verification of sustainability practices reduces potential risk due to decisions made outside of Best Buy's control. In regards to collaboration, Best Buy has a government relations department and participates with trade associations; works on legislation related to e-waste and participates in Environmental Initiative's local efforts to promote sustainability. In addition, providing customers access to knowledge about life cycle environmental impacts shifts choice responsibility from Best Buy to the consumer. Increased knowledge and reduced risk address the growing interest in sustainability by investors.

8. Comparison of Content and Survey Analysis

There is a wide range in both publically reported sustainability efforts and answers to the survey questions about sustainability efforts. We counted the number of positive responses to survey questions (boxes checked) that asked about specific environmental sustainability efforts and used the total to represent the level of environmental sustainability efforts of each business in the survey results. We plotted the survey and content scores as percent of total possible score in Figure 8.

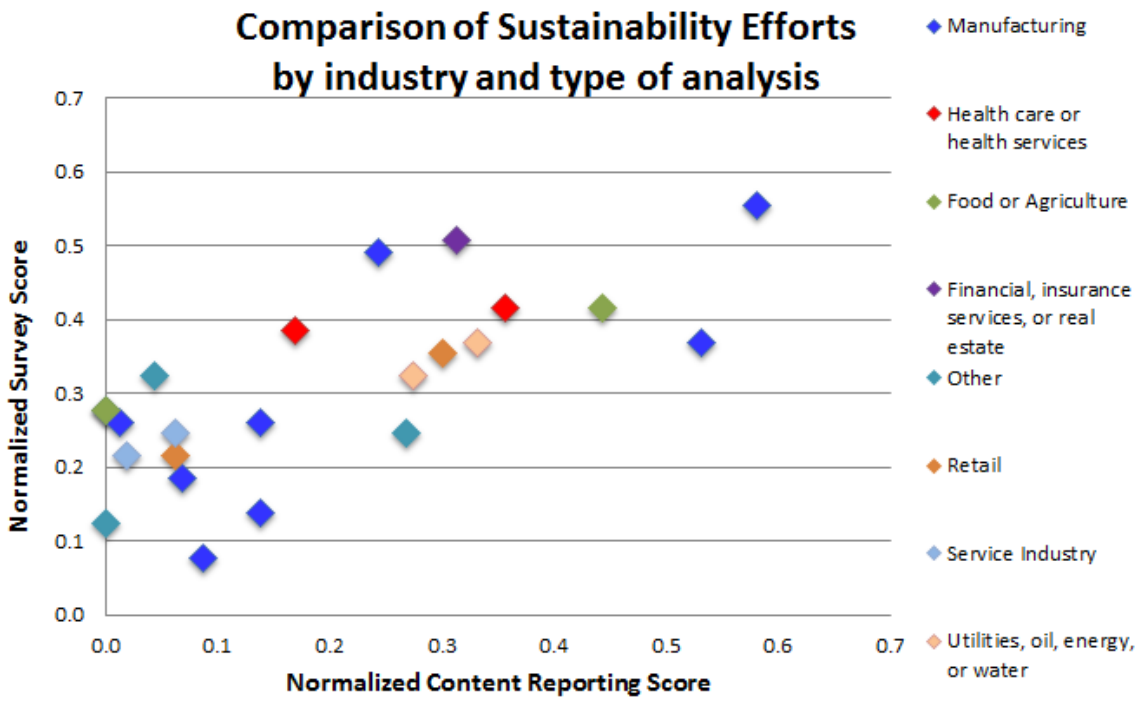

Figure 8: Comparison of Results of Survey and Content Analysis by Industry

Immediately noticeable is general the trend in Figure 8 which show that the more sustainable activities a business does the greater they publically report the activities. Obviously, if you are doing more you have more to write about. However, the wide variance in the trend shows that you cannot expect to rely on publically available data to get an accurate representation of sustainability activates by businesses in Minnesota. Table 5 lists the businesses represented by each diamond in Figure 8.

Table 5: List of Coded Businesses Who Self-Identified in Survey

Industry	List of Businesses Coded and Answered Survey
Manufacturing	3M, Andersen Corporation, Chart Industries, Fastenal, Graco, HB Fuller, Liberty Diversified, Loram, Tennant
Food or agriculture	Cargill, First District Associations,

Industry	List of Businesses Coded and Answered Survey
Financial, insurance or real estate	Wells Fargo
Utilities, oil, energy or water	Great River Energy, Xcel
Service industry	AmeriPride, Carlson
Health care or health services	CentraCare / Healtheast, HealthPartners
Retail	Luther Automotive, Target
Other	Metropolitan Airport Commission, Mosaic, SPS Commerce

Also noticeable are the leaders who publicly report far more than other businesses on the far right of the graph. Both 3M and Andersen Corporation are the main outliers that break away from the majority of other manufacturers represented by the blue dots in the graph. Another observation is that the fact that healthcare businesses are in a generally horizontal line at about 0.4 while utilities are at about the 0.35 and the service industry is slightly above the 0.2 level. This shows that businesses within each industry answered the survey with approximately the same level of sustainability efforts as other businesses in their industry. The amount of publically reported activities causes the wide variance in the data.

Not only do results vary significantly between survey responses and publicly available information by industry, they vary by type of sustainable activity. For example, Figure 9 shows the difference in results for sustainability activities related to waste reduction. Each type of activity was reported less frequently in publicly available information than when sustainability professionals were asked to report through a survey.

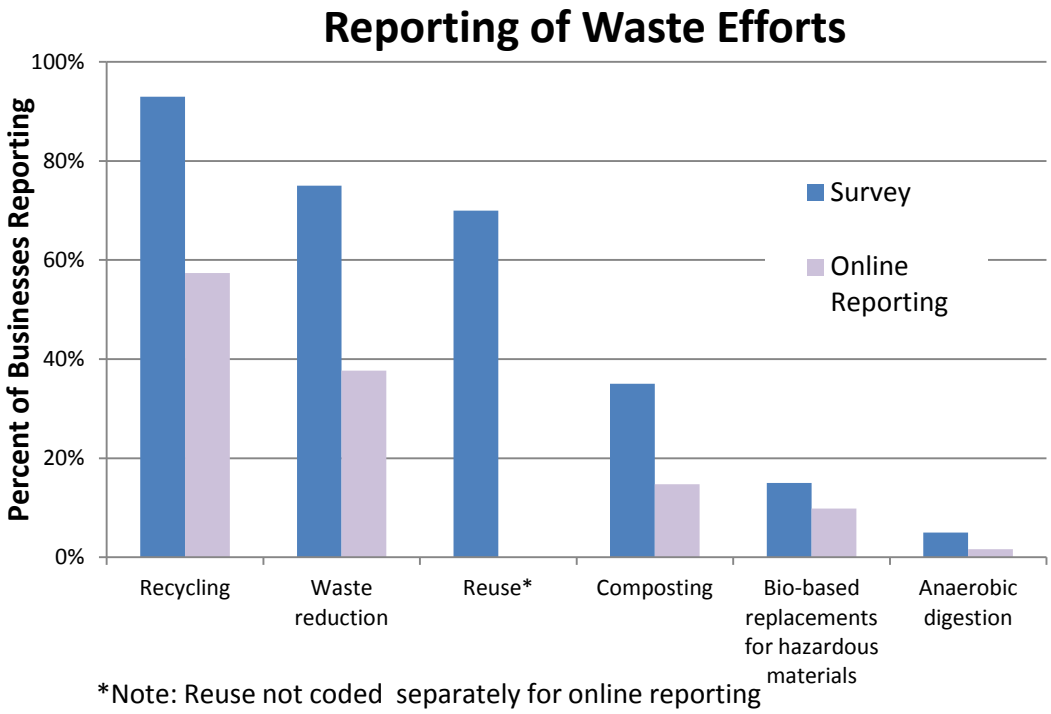

Figure 9: Variance in Reporting of Waste Activities

9. Discussion

9.1. Major Efforts

Minnesota Businesses engage in environmental sustainability activities in energy efficiency, water conservation and waste reduction, followed by vehicle efficiency and GHG reductions.

Energy efficiency, through both efficient lighting and other measures, is clearly one of the largest sustainability focuses for large Minnesota businesses (Figure 10). Coding analysis and survey results both showed that more businesses than not are making energy efficiency improvements to facilities and operations, no matter business size or industry.

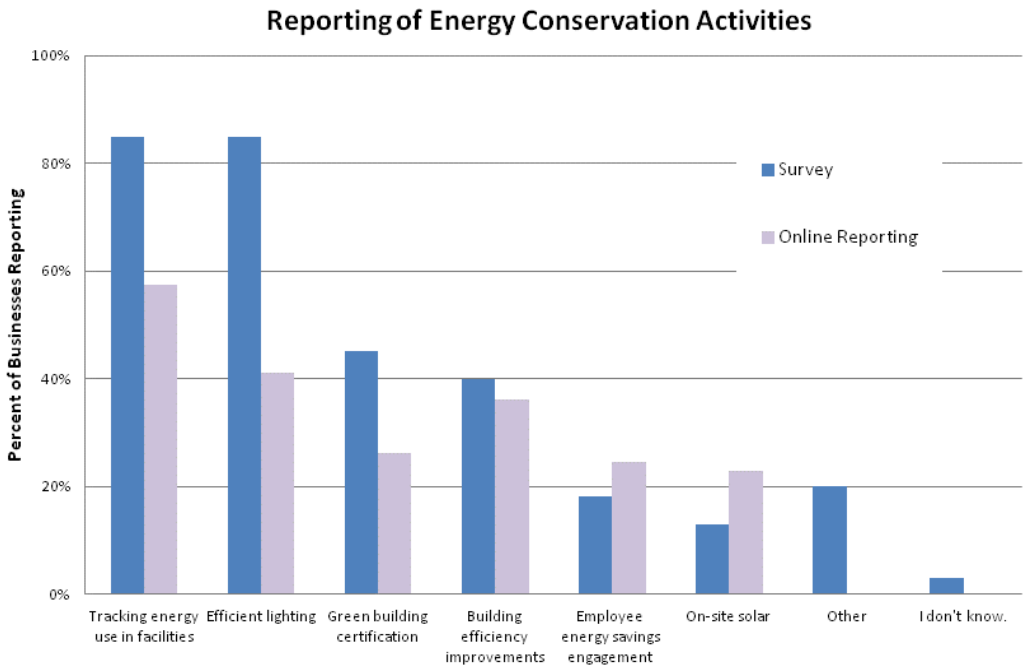

Figure 10: Reporting of Energy Conservation Activities in Online Material and by Survey

Improving vehicle efficiency and maintenance is a focus for more than a third of businesses coded and survey respondents (Figure 11). Like energy efficiency, this involves cost-saving investments which can often have short return on investment. However, coding analysis showed many fewer businesses using business travel management as a sustainability activity than reported by survey respondents. This may be due to selection bias in either research method, or because businesses are not as inclined to discuss business travel in their sustainability literature.

Although not within the sustainability report, 3M promotes commuters to bike to work through bike racks and showers on-site and supporting a bicycle user community and monthly bike to work days. The multiple method approach of this study highlights the limitation of using online content as the only source of information about efforts of businesses, as not all sustainability efforts may be relevant to their intended audience.

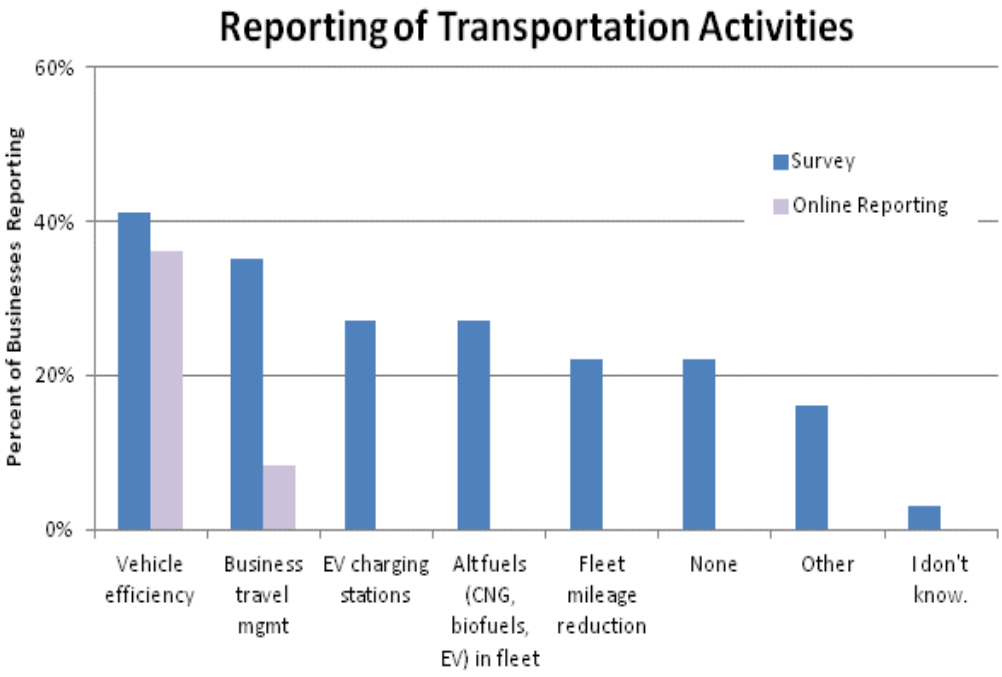

Figure 11: Reporting of Energy Reduction in Transportation Activities

More than half of all coded businesses and survey respondents are doing GHG emissions tracking and reporting. This suggests that emissions reporting is becoming standard practice for many large Minnesota businesses, but still has great potential for expansion to more businesses. Survey responses showed that emissions are reported to a variety of third party and internal organizations, as there is not yet a single, widely accepted reporting system.

Finally, both coding analysis and survey responses showed that waste reduction is a priority for most large Minnesota businesses (Figure 9, above). More than half of all coded businesses and survey respondents recycle, and the survey suggest that a significant number of businesses are focused on reuse of materials.

9.2. Gaps

While many sustainability reports mentioned some degree of investment in renewable energy, survey data suggests that only a small minority of businesses have invested in on-site solar, purchasing renewable energy credits, or participating in a green-pricing program with their utility. The business case for investment in renewable energy may be less clear than that for reduction of energy use or waste, and the difference in the coding and survey data may be due to investments outside of Minnesota and a lack of renewable energy investment within the state.

The use of alternative fuels and electric vehicles in business fleets also was missing from most sustainability reports and survey responses (Figure 11). This, again, might be partially due to

conditions specific to Minnesota, but a clear lack of focus on transportation issues beyond vehicle efficiency relative to other sustainability areas suggests the need for improvement.

A major gap in understanding business sustainability and a limitation to this research is the availability of comprehensive sustainability information from most businesses. While a small number of sustainability reports were well-produced, seemingly transparent, and comprehensive, most businesses provided moderate too little information, with some disregarding disclosure entirely. Creating a sustainability report requires resources and that businesses have something to show the public. Increased pressure from stakeholders to report sustainability efforts could improve the quantity and quality of publicly available information and possibly the amount of sustainability activity.

9.3. Drivers and Limitations

Survey responses and the literature review both suggest that the major drivers of investment in sustainability initiatives are some combination of cost-savings, reputational gain, and corporate culture or senior management interest. These motivations vary depending on a business's business model, industry, and management.

The cost and ROI of sustainability projects are the primary limitations to new investment, suggesting that the business case for sustainability initiatives is central to spurring action. Survey respondents also noted their business model restricts investment in long-term efforts, with one describing the limitation as, "a business model that does not support long term investments or long ROIs." Another said, "Common terminology + time horizon + common understanding issues/ops" is what was holding their business back from more sustainability efforts. Limited resources were also identified as a primary limitation, suggesting that businesses often lack the capacity to develop and implement new sustainability projects.

> The main limitation: "A business model that does not support long term investments or long ROIs."
>
> Anonymous Survey Response

9.4. Collaboration

Collaboration is not a primary activity reported in the largest Minnesota business's sustainability reporting online. About one third of the businesses studied mentioned consideration of stakeholders and collaboration with other businesses or organizations in their reporting. Only 13% of the businesses mentioned collaborating with local government in their online reporting and of these, three gave specific examples. Since the target audience for online reporting is geographically larger than the local community, it is not surprising that there is little information disclosed.

In response to the survey, 80% responded when asked to describe collaboration efforts between the city and their business, which is considerably higher than the amount reported online. The most common three types of collaboration were related to water, energy and waste. Water, in particular, was described as a collaborative effort for businesses that have significant water in

their operations. The case studies indicate that how businesses engage with local government depends on their sustainability strategy. Andersen has a strong relationship with Habitat for Humanity. 3M's Smart Cities Initiative in Europe relates to their grid component products. Best Buy's government relations works on e-waste legislation.

Local government agencies may find businesses espoused values and reduction targets in sustainability reports. They will miss local collaboration efforts that are more likely to be found in local organization's websites. One example is the Minnesota Chapter of the U.S. Green Building Council, which has speakers from the City of St Paul and Minnesota Wild sharing a keynote presentation and sustainability staff from Andersen and Wells Fargo leading a session on employee engagement as part the their Impact 2015 Conference (Minnesota Chapter USGBC 2015).

Xcel Energy's Partners in Energy is a program designed for collaboration between cities, their residents and businesses, in a two-year process of developing and implementing an action plan to meet the community's energy objectives (Xcel 2015). In Maplewood, 3M is one of the local business representatives, which is too granular of detail for a sustainability report of a multi-national corporation (City of Maplewood 2015). Environmental Initiative, a local nonprofit organization that focuses on building public-private partnerships, has networking and information sharing sessions that include several of the businesses that were coded, but was not mentioned in most of the online reporting.

9.5. Policy Implications

These results affirm the importance of understanding the business case for sustainability. Businesses will act differently depending on their CSR strategy and its relationship to their stakeholders and business model. Public information can help provide background information on a business's efforts, particularly for large businesses and businesses that are positioning themselves sustainability leaders. However, online information should not be relied upon for a comprehensive understanding of the efforts of a business, particularly in local communities.

Businesses are engaging more with industry groups and other organizations than with local government. Local agencies can consider how they might further tap into local organizations or existing networks between sustainability professionals. Due to the amount of resources required for sustainability reporting, simplification of reporting methods may also help increase participation.

Gaps in renewable energy investment and sustainable transportation efforts represent an opportunity for policymakers to collaborate with business and incentivize action on issues that may not have clear business cases or short-term ROIs.

Since cost and resources are primary limitations to new sustainability projects, policymakers should consider ways to leverage resources for ultimately beneficial projects in order to spur action.

10. Conclusion

This report shows large variation in the types and extent of sustainability efforts by Minnesota businesses, and companies are distinguished by size, age, and in part industry. Publically available information about environmental sustainability is not comprehensive or necessarily representative of actual efforts. The most prevalent sustainability efforts focus on energy conservation, waste reduction, and water conservation. The most noticeable gaps concern investment in renewable energy, encouraging alternative transportation and efficient commuting, and capacity to implement sustainability projects. Companies are motivated most by cost savings, reputation and regulation. Primary limitations to new sustainability projects are cost and resources.

We recommend further research to explore the following questions:

- Why are older businesses reporting more sustainability work? How can policy encourage smaller and newer businesses to increase efforts?
- How can the business case for more sustainability efforts be made across business strategies?
- How do formal and informal networks of sustainability professionals affect businesses sustainability actions within Minnesota?

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12. Appendix A – Coding Rubric

Evaluators assigned each business a score in each of the following 40 categories describing energy, waste, water, greenhouse gas emissions, transportation, and collaboration practices. Using the criteria in Table 3, Section 4.1. To ensure consistency in scoring between evaluators, each individual scored the same report. The group discussed scores discrepancies.

ID	Category	Description
1	Energy	Energy Use Reduction - General energy use measure
2	Energy	Energy / Buildings: Existing building energy efficiency, remodeling, retrofits
3	Energy	Energy / Buildings: New building design (LEED, Energy star)
4	Energy	Energy / Equipment : reduction in energy consumed for manufacturing practices
5	Energy	Energy Conservation - Lighting-related
6	Energy	Energy / Recovery: steam, heat (CHP)
7	Energy	Energy Benchmarking: Compare the energy use and performance of your facilities with other peer plants using standardized tools.
8	Energy	Energy: Engaging employees in energy savings programs
9	Energy	Energy Independence & resiliency goals
10	Energy	Energy: Solar Use or investment
11	Energy	Energy: Wind use or investment
12	Energy	Energy / Renewable: Note any anerobic digestion, waste wood, biomass burning, or purchase agreements for renewable
13	Energy	Transportation: Fuel and vehicle efficiency/maintenance, fleet mgmt, fuel reduction for product distribution or logistics
14	Energy	Transportation: Managing energy use related to business travel
15	Energy	Transportation / Employee: Energy savings associated with employee telecommuting, carpooling, EV, location of facilities to bus lines
16	Energy	Transportation / Employee: Promoting behavior of walking, biking and transit use (reduced fare bus passes)
17	Energy	Energy / Food: Promotion of farmers markets, Community supported agriculture, or low-carbon food choices

ID	Category	Description
18	GHG	GHG emission reporting of reductions
19	Water	Water conservation and recycling practices
20	Waste	Waste / Recycling: are they doing it? (yes/no) How long (number of years) have they been doing it? Scope of recycling (office paper (low) vs. production process (high))
21	Waste	Waste reduction (proactive): Pollution prevention, proactive approaches to pollution prevention. Elimination of waste before it is produced. More specific to pollution prevention
22	Waste	Waste reduction (reactive): Reactive approaches to reducing waste, Emissions, Reduction i.e., scrubbers, and incinerators, and treatment of waste
23	Waste	Substitution: Substitution Replacing a material that can cause environmental problems with another material which is not problematic
24	Waste	Waste : Composting organics materials
25	Waste	Waste: Participation in Minnesota Materials Exchange
26	Material design	Design: Use of life cycle analysis or design for environment: Life Cycle (LCA) (yes/no)
27	Material design	Design: Eco Efficient Products, Eco Design, Process Improvement Do they mention the stages in which environmental checks are performed. Percentage of products that use environmentally sensitive design processes
28	Material design	Design / Packaging: Returnable packaging, reduced packaging, recyclable packaging, environmentally responsible packaging using packaging and pallets that can be returned after they are finished being used. New alternative to packaging
29	Material design	Design: Toxic/hazardous use reductions
30	Material design	Design: Bio-based replacements
31	Risk Mgmt	Environmental risk analysis: Risk, Audit, Prior Assessment Do they assess the risks of materials to the environment, to people?
32	Risk Mgmt	Materiality: How is the environment considered in their materiality statement?

ID	Category	Description
33	Env Mgmt Policies	LIST ONLY, NO CODE Environmental awards/recognition: Awards corporate citizen recognition by government bodies (Fed, State, and local), magazines, and environmental groups for environmental achievement
34	Env Mgmt Policies	Environmental participation: ISO 14000, EPA voluntary programs, etc. Participation in these types of programs score lower, if received certification score higher
35	Env Mgmt Policies	Environmental department/teams (existence/extent of formal organizational structure): Environmental Team How high is it in corporate hierarchy? How large of a budget does it have? Where do they report to? Number of people
36	Env Mgmt Policies	Cost savings for environmental projects and activities: Objective numbers given for the amount of money saved due to proactive environmental activities
37	Employee	Employee: Rewards as incentive for environmental project
38	Suppliers	Suppliers: consideration of supplier environmental practices: 1 being no consideration, 5 being auditing.
39	Collaboration	Communication: Are stakeholders informed or consulted (stockholders, employees, customers, supplier, and community) as to the environmental impacts of the firm and or the environmental efforts and activities of the firm. Do they collect & use feedback from the surrounding community and interest groups?
40	Collaboration	Collaboration :Strategic alliances: Alliances with other firms to jointly work on environmental projects
41	Collaboration	Collaboration with local government

13. Appendix B – Interview Protocol

The purpose of developing a standard interview protocol was to determine what we intended to learn from the interview including businesses strategic drivers and if the drivers were socially or business motivated.

General questions:

1. Please tell us about sustainability at your company.
2. What benefits has your company realized due to your sustainability initiatives?
3. What future opportunities do you see for sustainability?
4. Please share challenges your company faces related to sustainability work.
5. How has your company worked with other organizations, including local government, on sustainability initiatives?

More detailed questions:

1. Please tell us about sustainability at your company.
2. How does org collaborate across business groups?
3. What benefits has your company realized due to your sustainability initiatives?
4. What has your company learned from sustainability initiatives?
5. How much of your sustainability efforts are resulting from other projects?
6. What challenges does your company face related to sustainability work.
7. How do you look at ROI for sustainability projects?
8. What non-cost barriers have you come across?
9. How do you justify sustainability projects?
10. What future opportunities do you see for sustainability?
11. Which direction do they see sustainability going?
12. What are the strategic motivations or drivers?
13. How has your company worked with other organizations, including local government, on sustainability?

14. Appendix C – UMN Business Sustainability Study Survey

Sustainability Initiatives

About.

This survey is being conducted as part of research at the Humphrey School of Public Affairs on business sustainability efforts in Minnesota. If you have any questions, please contact us at lemmo032@umn.edu. Thank you for your time and consideration.

1. Does your company publish a sustainability report?

- ○ Yes
- ○ No
- ○ I don't know.

2. Please indicate if your company has sustainability targets in the following areas. If possible, please include specific target.

- ☐ Energy use reduction
- ☐ Greenhouse gas reduction
- ☐ Waste reduction
- ☐ Renewable energy
- ☐ Water use reduction
- ☐ Other

3. Which of the following does your company do related to energy in any Minnesota location? Mark all that apply.

- ☐ Tracking energy use in facilities
- ☐ Purchasing Renewable Energy Credits or participating in a utility green pricing program
- ☐ Efficient lighting
- ☐ Employee energy savings engagement program

- [ ] ENERGY STAR or other green building certification
- [ ] Other building efficiency improvements
- [ ] On-site solar
- [ ] Other:
- [ ] I don't know.

4. Which of the following does your company do to reduce energy use related to transportation in Minnesota? Mark all that apply.

- [ ] Fleet mileage reduction
- [ ] Use alternative fuels (CNG, biofuels, EV) in fleet vehicles
- [ ] Vehicle efficiency and maintenence
- [ ] Electric vehicle charging stations
- [ ] Business travel management
- [ ] Other
- [ ] None
- [ ] I don't know.

5. Which of the following programs does your company have to encourage employee commutes by modes other than single occupancy vehicles? Mark all that apply.

- [ ] Incentives to walk or bike to work. Please describe.
- [ ] Incentives to carpool. Please describe.
- [ ] Bike racks on-site.
- [ ] Showers on-site.
- [ ] Transit passes or discounts.
- [ ] Other. Please describe.

6. Which of the following does your company do related to water use in Minnesota? Mark all that apply.

- [ ] Storm water management improvements
- [ ] Water use conservation
- [ ] Water quality assurance
- [ ] Other
- [ ] None
- [ ] I don't know.

7. Which of the following does your company do related to waste in Minnesota? Mark all that apply.

- [ ] Waste reduction
- [ ] Reuse
- [ ] Recycling
- [ ] Composting
- [ ] Bio-based replacements for hazardous materials
- [ ] Anaerobic digestion
- [ ] None
- [ ] I don't know.

8. Which descriptions reflect your company's measurement of greenhouse gas (GHG) emissions? Mark all that apply.

- [ ] No measurement
- [ ] Measure Scope 1 (Direct GHG emissions)
- [ ] Measure Scope 2 (GHG emissions from purchased electricity, heat and steam)
- [ ] Measure Scope 3 (Indirect GHG emissions from outsourced activities, suppliers, customers, etc)
- [ ] Report GHG emissions. Where?
- [ ] None
- [ ] I don't know.

Organization and Management

9. Rank why your company adopts sustainability practices in order of importance by dragging and dropping each row into the proper order.

Regulatory compliance

Cost savings

Reputation

Senior Management Interest

Business opportunity

Risk minimization

Other

10. What is the main limitations or deterrents facing your company when making sustainability decisions?

Collaboration

11. In which of the following areas has your company worked with local government(s) to improve sustainability in Minnesota? Mark all that apply.

- ☐ Energy use reduction
- ☐ Storm water / sewer improvements
- ☐ Transportation or transit use
- ☐ Waste reduction
- ☐ Community engagement events
- ☐ Other
- ☐ None

12. Please describe any notable collaboration efforts between your company and local government on sustainability issues.

Contact Information

13. In which sector would you classify your company?

- ○ Manufacturing
- ○ Food or Agriculture
- ○ Financial, insurance services, or real estate
- ○ Retail
- ○ Consulting, professional, and legal services
- ○ Utilities, oil, energy, or water
- ○ Health care or health services
- ○ Service Industry
- ○ Non-profit
- ○ Other

14. Approximately, how many total employees work for your company?

- ☐ 499 or less
- ☐ 500 - 999
- ☐ 1000 to 4999
- ☐ 5000 to 9999
- ☐ 10,000 to 49,999
- ☐ 50,000 or more

15. Please share the following information. Your personal information will not be linked to your responses.
Your name, Title, Company, Preferred Contact Information

16. May we contact you to discuss your responses?

- Yes
- No

15. Appendix D – Survey Results

My Report
Last Modified: 05/12/2015

1. Does your company publish a sustainability report?

#	Answer	Bar	Response	%
1	Yes		24	51%
2	No		21	45%
3	I don't know.		2	4%
	Total		47	

Statistic	Value
Min Value	1
Max Value	3
Mean	1.53
Variance	0.34
Standard Deviation	0.58
Total Responses	47

2. Please indicate if your company has sustainability targets in the following areas. If possible, please include specific target.

#	Answer	Bar	Response	%
1	Energy use reduction		28	88%
2	Water use reduction		23	72%
3	Greenhouse gas reduction		21	66%
4	Waste reduction		24	75%
5	Renewable energy		10	31%
6	Other		10	31%

Energy use reduction	Water use reduction	Greenhouse gas reduction	Waste reduction	Renewable energy	Other
					Community & Social Responsibility, Employees Safety, Farm & Aminal Welfare
					Safety
					Erosion Reduction
					Ecological Conservation
					VOC Emission Reduction
40	(>h20 efficiency by 45%)	35	(>diversion rate by 65%)		35% LEED buildings
Improve energy efficiency 25% from 2005-2015	Water conservation plans in water scarce and stressed locations		Reduce waste 10% from 2010-2015, indexed to sales		VOC reduction of 15% from 2010-2015, indexed to sales
5% efficiency improvement	5% intensity reduction	5% intensity reduction		12.5% by 2015	Deforestation commitment
10% reduction by 2020 off of our base year level	10% reduction by 2020 off of our base year level	10% reduction by 2020 off of our base year level	10% reduction by 2020 off of our base year level		reduce packaging by 25 million pounds by 2020
10% over 5 yrs	10% over 5 yrs	10% over 5 yrs	10% over 5 yrs		
Looking at alternative lighting features			Paper and other recycling		
5% efficiency improvement by 2015	5% intensity improvement by 2015	5% intensity reduction by 2015		12.5% by 2015	
20%	20%		20%		
Reduce energy use/lb production by 25%, 2012 to 2022	Reduce water use/lb production by 20%, 2012 to 2022	Reduce GHG emissions/lb production by 25%, 2012 to 2022	Reduce waste/lb production by 20%, 2012 to 2022		
20% by 2020	We have water conservation in our waste goals	In parallel with energy goals	Zero waste to landfill, aspirational		
Reduce every year	Reduce every year	Reduce every year	Reduce every year		
		20% by 2020 from 2009 baseline			
			Zero Waste To Landfill		

Statistic	Value
Min Value	1
Max Value	6
Total Responses	32

4. Which of the following does your company do to reduce energy use related to transportation in Minnesota? Mark all that apply.

#	Answer	Bar	Response	%
2	Vehicle efficiency and maintenance		15	41%
4	Business travel management		13	35%
3	Electric vehicle charging stations		10	27%
8	Use alternative fuels (CNG, biofuels, EV) in fleet vehicles		10	27%
1	Fleet mileage reduction		8	22%
7	None		8	22%
6	Other		6	16%
9	I don't know.		1	3%

Other
telematics technology and training programs
No fleet
Convenience parking for fuel efficient vehicles and bikes
-Utilize GIS to design truck routes in pursuit of optimal routing efficiency and mileage minimization
Commuter van pools/ride share and bicycle user community
Trucks transport only full loads of product

Statistic	Value
Min Value	1
Max Value	9
Total Responses	37

5. Which of the following programs does your company have to encourage employee commutes by modes other than single occupancy vehicles? Mark all that apply.

#	Answer	Bar	Response	%
1	Incentives to walk or bike to work. Please describe.		6	17%
2	Incentives to carpool. Please describe.		11	31%
3	Bike racks on-site.		26	74%
5	Showers on-site.		23	66%
6	Transit passes or discounts.		10	29%
8	Other. Please describe.		3	9%

Incentives to walk or bike to work. Please describe.	Incentives to carpool. Please describe.	Other. Please describe.
Reduced parking over the year	Car pool parking spots	
Indoor bike parking		
points that can be redeemed for cash	premium parking for carpools	
Bicycle User Community and monthly bike to work days	Van pool and ride share community	
Bike/bus ride challenge	Carpool challenge	
	Facilitate connections.	
	Parking incentive for carpool and high efficiency vehicles	
	Preferred parking spaces for carpools	
	good parking spots	
	Preferred parking	
		few showers on site at one facility. Need more and at all locations. Some incentives exist, although minimal and not widely known. No incentives given for biking. Special parking only incentive for carpool.
		On bus routes at corporate HQ in Winona MN.
		discounts on hybrid vehicles

Statistic	Value
Min Value	1
Max Value	8
Total Responses	35

6. Which of the following does your company do related to water use in Minnesota? Mark all that apply.

#	Answer	Bar	Response	%
1	Storm water management improvements		21	54%
2	Water use conservation		22	56%
3	Water quality assurance		13	33%
4	Other		4	10%
5	None		3	8%
6	I don't know.		4	10%

Other
Needs improvement
On-site Pretreatment
smart tech
pretreatment programs

Statistic	Value
Min Value	1
Max Value	6
Total Responses	39

7. Which of the following does your company do related to waste in Minnesota? Mark all that apply.

#	Answer	Bar	Response	%
3	Recycling		37	93%
1	Waste reduction		30	75%
2	Reuse		28	70%
4	Composting		14	35%
5	Bio-based replacements for hazardous materials		6	15%
8	Anaerobic digestion		2	5%
6	None		0	0%
7	I don't know.		0	0%

Statistic	Value
Min Value	1
Max Value	8
Total Responses	40

8. Which descriptions reflect your company's measurement of greenhouse gas (GHG) emissions? Mark all that apply.

#	Answer	Bar	Response	%
1	No measurement		9	23%
2	Measure Scope 1 (Direct GHG emissions)		21	54%
3	Measure Scope 2 (GHG emissions from purchased electricity, heat and steam)		16	41%
4	Measure Scope 3 (Indirect GHG emissions from outsourced activities, suppliers, customers, etc)		9	23%
6	Report GHG emissions. Where?		18	46%
7	None		4	10%
8	I don't know.		1	3%

Report GHG emissions. Where?
EPA (e-ggrt)
EPA E-ggrt
sustainability report
Sustainability Report and various investor surveys
CDP
EPA MRR
Internally
Carbon Disclosure Project
Internet
CDP
Carbon Disclosure Project
MPCA
csr and cdp
CDP
Annual 3M Sustainability Report and CDP
Emission Inventory Reports

Statistic	Value
Min Value	1
Max Value	8
Total Responses	39

9. Rank why your company adopts sustainability practices in order of importance by dragging and dropping each row into the proper order.

#	Answer	1	2	3	4	5	6	7	Total Responses
1	Senior Management Interest	2	6	6	5	8	11	2	40
2	Business opportunity	6	2	8	7	10	7	0	40
4	Cost savings	11	12	4	5	4	4	0	40
5	Regulatory compliance	9	11	7	3	2	7	1	40
6	Reputation	6	3	10	8	8	4	1	40
8	Risk minimization	4	6	5	12	8	5	0	40
11	Other	2	0	0	0	0	2	36	40
	Total	40	40	40	40	40	40	40	-

Other
customers are asking
Lessen environmental impact
Employee engagement
all of above

Statistic	Senior Management Interest	Business opportunity	Cost savings	Regulatory compliance	Reputation	Risk minimization	Other
Min Value	1	1	1	1	1	1	1
Max Value	7	6	6	7	7	6	7
Mean	4.30	3.85	2.78	3.08	3.63	3.73	6.65
Variance	2.93	2.75	2.85	3.51	2.65	2.31	1.77
Standard Deviation	1.71	1.66	1.69	1.87	1.63	1.52	1.33
Total Responses	40	40	40	40	40	40	40

10. What is the main limitations or deterrents facing your company when making sustainability decisions?

Text Response
Cost to implement new technology/systems/programs
There is not one standard we can go to. For example there is nothing like ISO 14001 that we could get certified in (or at least not as popular as ISO 14001)
A business model that does not support long term investments or long ROIs
Knowing how much to share...too much information my lose acompetitive advantage, but want to share successes too.
Costs, feasibility, alternative resources
resources
Budgetary concerns
Benefit measurability and Connection to cost savings, alignment with other strategic initiatives.
ROI
N/A
Resource availability or constraints
Cost
Effect of weather conditions, customer driven, business levels
Cost justification, limited resources
Resoures
accessiblity
Challenges implementing known technologies.
Resources
capacity - "manpower" to implement
Discomfort with non-traditional practices, belief that increased sustainability costs more
Financial sustainability
Cost and/or decentralization of our nearly 3000 stores and 14 distribution centers; largest impact is our fleet of vehicles.
Logistics (e.g., space and material handling to accumulate sufficient low-value material such as plastic wrap to be economically feasible to recycle) and cost/return on investment.
common terminology + time horizon + common understanding issues/ops
complexitity of facilities and size of company. Change is hard for them
Cost to implement
Business priotities, return on investment
Financial impacts
Business is growing. Customers ordering more product. Producing more finished goods requires more energy.
cost

Statistic	Value
Total Responses	30

11. In which of the following areas has your company worked with local government(s) to improve sustainability in Minnesota? Mark all that apply.

#	Answer	Bar	Response	%
1	Energy use reduction		18	49%
7	Community engagement events		16	43%
4	Waste reduction		13	35%
2	Storm water / sewer improvements		11	30%
3	Transportation or transit use		10	27%
6	None		7	19%
5	Other		3	8%

Other
Adopt a Highway
Air emission reductions
might be all, but not sure

Statistic	Value
Min Value	1
Max Value	7
Total Responses	37

12. Please describe any notable collaboration efforts between your company and local government on sustainability issues.

Text Response
None
Worked with 494 Corridor to promote alternatives to single car commuting.
This is a continuous process for us. We are a significant company right in the center of town/residential. We have collaborated on numerous occasions on energy and infrastructure due to the high volume of waste water/sewer discharge from our 5 million lbs. of milk/day cheese plant.
We have worked with MDNR and MPCA to collect and reuse agricultural tile discharge water, site storm water, and reclaim industrial discharge water from other source to replace 75-85% of make-up water that would otherwise be utilized out of a local aquifer.
25 Medicine take back locations and growing.
Our corporate office is in Minnesota but all of our operating facilities – where the company's relevant impacts occur – are in other states where we engage government heavily.
Rain water runoff treatment.
Not aware of any notable projects or discussion, however collaboration with the organization as a whole as well as local agencies has taken place.
We have solar panels on four of our dealerships and we look to include them in our future construction projects
Working with local and state agencies on last expansion project twenty three million (ex. holding ponds, energy efficient lighting, water recirculation).
Local communities pledging QECBs to a solar project on our campus.
Participated in the following: CSEO - Climate Solutions and Economic Opportunities - discussions. El's policy forum and legislative preview. Center for Energy and Environment's (CEE) Energy Efficient Roundtable discussions in support of their Clean Energy and Economic Development Summit and report out to the Governor and policy makers. MN Chamber others
We have a good relationship with the waste water management staff of our city. We mechanically remove food waste from our waste water stream and make fertilizer out of it. Staff has given presentations to other regulated waste water generators in the area about efforts done to improve waste water quality. Spills and leaks are communicated and regulated in an open and collaborative way.
City of Minneapolis VOC emission reduction program.
Waste reduction in collaboration with Hennepin County Environmental services and MN PCA. Member of multi-company waste reduction collaborative in conjunction with Environmental Initiative
Cities of Woodbury and Oakdale on landfill and drinking water issues.
efficiency, peak reduction, solar, education

Statistic	Value
Total Responses	17

13. In which sector would you classify your company?

#	Answer	Bar	Response	%
1	Manufacturing		13	34%
2	Food or Agriculture		6	16%
3	Financial, insurance services, or real estate		2	5%
4	Retail		3	8%
5	Consulting, professional, and legal services		0	0%
6	Utilities, oil, energy, or water		4	11%
7	Health care or health services		3	8%
8	Service Industry		2	5%
9	Other		5	13%
10	Non-profit		0	0%
	Total		38	

Other
Food Processing/Manufacturing
Chemicals
Transportation
technology
Manufacturing & Industrial Distribution

Statistic	Value
Min Value	1
Max Value	9
Mean	3.92
Variance	9.26
Standard Deviation	3.04
Total Responses	38

14. Approximately, how many total employees work for your company?

#	Answer	Bar	Response	%
10	50,000 or more		7	19%
9	10,000 to 49,999		4	11%
8	5000 to 9999		6	16%
7	499 or less		4	11%
4	1000 to 4999		10	27%
2	500 - 999		7	19%

Statistic	Value
Min Value	2
Max Value	10
Total Responses	37

15. May we contact you to discuss your responses?

#	Answer	Bar	Response	%
1	Yes		25	68%
2	No		12	32%
	Total		37	

Statistic	Value
Min Value	1
Max Value	2
Mean	1.32
Variance	0.23
Standard Deviation	0.47
Total Responses	37